

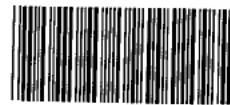
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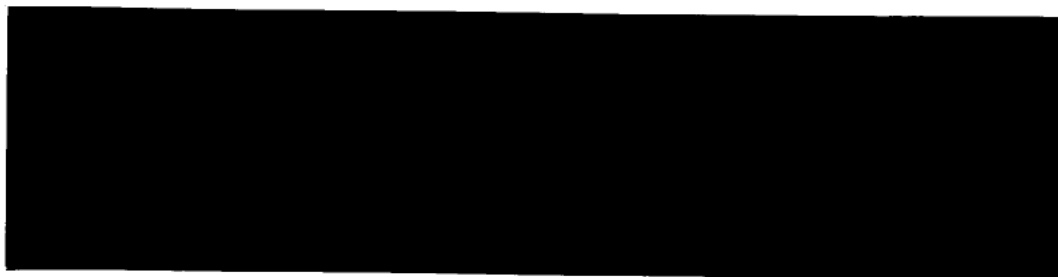
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FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION
SUPERFUND DIVISION

ORIGINAL
(Red)

R-585-1-7-22
SITE INSPECTION OF
PORTSMOUTH DAY CARE CENTER
PREPARED UNDER

TDD NO. F3-8612-41
EPA NO. VA-415
CONTRACT NO. 68-01-7346

FOR THE
HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 25, 1987

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY

REVIEWED BY

APPROVED BY

"Non-Responsive-Based on Revised Scope"

ENVIRON. SCIENTIST

ASSISTANT MANAGER

REG. OPERATIONS
MANAGER, FIT 3

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ORIGINAL
(Red)

Site Name: Portsmouth Day Care Center
TDD No.: F3-8612-41

APPENDICES

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SECTION 1

1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-7346. This specific report was prepared in accordance with Technical Directive Document No. F3-8612-41 for the Portsmouth Day Care Center site, located in Portsmouth, Virginia.

1.2 Scope of Work

NUS FIT 3 was tasked to conduct sampling and provide technical support at the Portsmouth Day Care Center site.

1.3 Summary

The subject site is an active day care center located in Portsmouth, Virginia. FIT 3 was tasked to accompany and assist EPA personnel during emergency sampling at the site. Earlier on-site soil sample analysis had revealed levels of up to 2,000 ppm of lead.

On May 11, 1986, NUS FIT 3 accompanied and assisted EPA personnel during emergency sampling at the subject site. A total of 20 soil samples and 8 wipe samples were collected by the FIT. Analytical results of the soil samples revealed lead concentrations within ranges generally reported in urban areas.

A complete quality assurance review and toxicological evaluation can be found in sections 6.0 and 7.0, respectively.

SECTION 2

2.0 THE SITE

2.1 Location

The Portsmouth Day Care Center is located on the corner of Lincoln and Fifth Streets in Portsmouth, Virginia. The site is located in a densely populated urban setting. The approximate center of the site can be located on the Norfolk South, Virginia Quadrangle at 36°49'30" latitude and 76°18'0" longitude, or 9 inches south and 11 inches east as measured from the northwest corner of the United States Geological Survey (U.S.G.S.) Norfolk South, Virginia Quadrangle (refer to figure 1, appendix B).

2.2 Site Layout

The site property is approximately 1/2 acre in size. The site consists of one main building and a playground. The entire site is fenced (see appendix B, figure 2).

The property is bordered to the north by Lincoln Street and to the west by Fifth Street. Empty lots border the site to the south and east.

The Abex Corporation site, a potential National Priorities List candidate, is located approximately 1/4 mile northeast of the site. The Norfolk Naval Shipyard is located approximately 1-1/4 miles south of the site.

2.3 Ownership History

The city of Portsmouth has owned the site property since the 1940s. Currently, the property lies under the jurisdiction of the Portsmouth Redevelopment and Housing Authority.

The Portsmouth Day Care Center has leased the property from the city since 1975. However, the center is city funded and is operated by the Portsmouth Child Health and Welfare Program.

2.4 Site Use History

According to the Portsmouth Redevelopment and Housing Authority, the site has operated as a day care center since the 1940s. Currently, the city of Portsmouth has plans to develop the property and the surrounding area into a commercial park.

2.5 Permit and Regulatory Action History

The site has no known permit or regulatory action history.

2.6 Remedial Action To Date

There has been no remedial action at the site.

SECTION 3

3.0 ENVIRONMENTAL SETTING

3.1 Water Supply

Drinking water for the city of Portsmouth is obtained primarily from 4 lakes located in Suffolk County, approximately 16 miles southwest of Portsmouth. These include (b) (9) Lakes. The total drainage area of the 4 lakes is 58 square miles, which constitutes a reserve of 5.2 billion gallons. Three deep wells located at (b) (9) Lake and Lake (b) (9) are also used as a supply source. Water from two wells located at (b) (9) Lake is mixed with lake water as a means of fluoridation, while water from the well at Lake (b) (9) is discharged directly into the lake. Two additional wells are being constructed at (b) (9) Lake for emergency back-up supply.⁶

The Portsmouth Water Company services 100,000 industrial and residential customers in Portsmouth and portions of Suffolk and Chesapeake. The city of Norfolk, which is also located within three miles of the site, obtains its water supply from a series of lakes and wells located in Suffolk and Norfolk Counties.⁶

Groundwater is used for cooling and process water by industries located within a three-mile radius of the site.⁷ No known surface intakes, recreational facilities, or potable drinking wells are located within three miles of the site area.

3.2 Surface Waters

Surface runoff from the site is collected by storm sewers and discharged into the Southern Branch of the Elizabeth River.⁸ The Virginia State Water Quality Standards under State Water Control Law, Section 62.1-44.15 (3) classifies the Southern Branch of the Elizabeth River as an estuarine water body with special standards for shellfish.⁹ The Southern Branch of the Elizabeth River flows north into the Elizabeth River, which joins the James River north of the site area and then the Chesapeake Bay to the northeast.¹⁰

There are no known surface water intakes within three miles of the site area. However, the Southern Branch of the Elizabeth River receives non-point source discharges.¹³

3.3 Hydrogeology

3.3.1 Geology

The Portsmouth Day Care Center site is located within the Coastal Plain Physiographic Province. Sluggish tidal rivers, stretches of flat land, and the absence of hard rocks are all characteristic of the province. Within Virginia, gravels, sands, clays, loams, and shell marls of early Cretaceous to Holocene age form an eastward thickening wedge which reaches a thickness of 2,700 feet beneath the site. In some places, some sands have been consolidated into sandstones, clays into shales, and shell beds into lime rock; however, these units generally are thin, irregular layers of limited extent.^{1,2}

The upper member of the late Pleistocene Sand Bridge Formation (of the Columbia Group) underlies the subject site. Within the Norfolk, Virginia area, the upper member of the sand bridge is comprised of four facies, two of which crop out in the study area, the silty-sand and clayey-sand (see figure A, page 3-3).^{3,4} Barker and Bjorken (1978) provide the following descriptions of the units:

1. Silty-sand facies:* This unit, which underlies the site, is described as a clean, homogeneous, fine to medium sand with silt concentration of 10 to 35 percent. The maximum thickness is approximately 25 feet and the average thickness is 12 to 14 feet. It is described as river-influenced lagoonal deposits.³
2. Clayey-sand facies:* The unit lithologically ranges from clayey-sand, silt, and clay to well-sorted, fine to medium sand. It ranges from 10 to 15 feet thick in the western portion of the study area to 40 feet thick near the branches of the Elizabeth River. The unit is described as tidal channel deposits.³

FIGURE A

GEOLOGIC MAP

3. Silty-clay facies:* This unit is not present in the study area. It is described as a massive, cohesive clay and silt with approximately 20 percent fine sand. The unit is thin, only approximately 15 feet thick when combined with the lower member of the Sand Bridge Formation (described below). It was deposited under lagoonal conditions.³
4. Sand facies:* This unit is not present in the study area. It is described as a tan to light-gray, fine to coarse sand.³

*Barker and Bjorken (1978) provide no age order for the facies.

All of the aforementioned facies of the upper member of the Sand Bridge Formation overlie a homogeneous lower member composed of massively bedded, tan to light-gray, fine to medium sand with small amounts of pebbles. The lower member is a blanket deposit of variable thickness. Locally, erosion, occurring during the deposition of the upper member, has totally removed the lower member, and the various facies of the upper member overlie the early Pleistocene Norfolk Formation, also of the Columbia Group.^{3,4}

The Norfolk Formation, which does not outcrop within three miles of the subject site, also contains an upper and lower member within the study area; only the clayey-silty-sand facies of the upper member is present. This facies is described as a cross-bedded, fine to medium sand with isolated gravel and sand layers containing varying concentrations of silt and silty clay. The average thickness of the facies is 18.5 feet and, locally, the unit subcrops within 4 feet of the surface. Its depositional environment is believed to have been fluvial estuarine and brackish marine. The lower member is composed of clean quartz sand and fine gravel; the thickness of the unit ranges from zero to eight feet, and it is considered a beach sand. Within the study area, the Norfolk Formation, as a whole, may reach a thickness of 50 feet where deposited in channels cut into the underlying Yorktown Formation; however, over topographic highs in the Yorktown, the Norfolk is absent or only a few inches thick.³

The late Pliocene Yorktown Formation of the Chesapeake Group is described as a massively bedded, compact, greenish-gray fossiliferous fine sand, with an upper, predominantly clayey, bed which is approximately 35 feet thick in the study area.^{2,3,4} Quartz comprises the bulk of the sand; however, a small amount of glauconite provides the Yorktown with its distinctive greenish-gray coloration.^{3,4} Also present are layers of shelly material, composed of snails and attached barnacles and bryozoans, and thin silty clay layers. The greenish-gray color and molluscan fauna are excellent characteristics used to identify the Yorktown. Beneath the site, the top of the Yorktown is approximately 50 feet below the surface; however, 1/2 mile west of the site, the unit lies only 20 feet below the surface. Its total thickness is approximately 150 feet. The depositional environment of the formation is interpreted to be a continental shelf with warm waters approximately 75 to 150 feet deep.³

Underlying the Yorktown is the late Miocene Eastover Formation. Meng and Harsh (1984) describe the Eastover as a fine to coarse, commonly shelly sand, interbedded with silts, clays, shell beds, and gravels. No information concerning the thickness of the unit is available; however, it is known that the Eastover was deposited in a shallow marine environment.

In addition to the aforementioned units, surficial deposits of Holocene age alluvium, sand, and marsh sediments lie along all the major bodies of water within the study area (in some areas, fill has covered the natural alluvial deposits). These deposits range from organic silt to clean sand and are a few inches to 100 feet thick.³

3.3.2 Soils

No soils information is presently available.

ORIGINAL
(Red)

3.4 Groundwater

Available information indicates that wells within the study area draw primarily from two aquifers, an upper water-table aquifer (Columbia aquifer) and an artesian aquifer (Yorktown - Eastover aquifer). The Columbia aquifer consists of the Holocene and Pleistocene age deposits (alluvial deposits and Sand Bridge and Norfolk Formations). The Yorktown - Eastover aquifer is defined by the predominantly sandy deposits of the Pliocene Lower Yorktown and late Miocene Eastover Formations. The upper Yorktown consists of predominantly clayey deposits which form the Yorktown confining bed responsible for the artesian conditions existing within the Yorktown - Eastover aquifer.^{2,4}

Within both aquifers, water moves and is stored via intergranular openings (primary porosity); hence, water moves quite easily, and there is a large volume available in storage. Pump test information is lacking, but it is known that wells dug, drilled, or jetted within the study area are mainly used for industrial purposes such as boiler feed or air conditioning.⁴ The majority of these wells draw from the Yorktown - Eastover aquifer and are generally 40 to 70 feet deep.^{2,4} Most of the wells are in batteries, which are groups of 2 to 40 wells with diameters ranging from 2.4 to 4 inches; individually, the wells average 5 to 10 gallons per minute (gpm). Wells drawing from the Columbia aquifer are generally 15 to 30 feet deep. The majority of wells producing from the Columbia are also in batteries; these batteries can produce up to 55,000 gallons daily. Cederstrom (1945) reports that static water levels within the Columbia vary greatly but average five to eight feet below the surface. Static levels within wells drawing from the Yorktown are reported to average 15 feet below the land surface.⁴

The quality of water produced from both aquifers is generally considered hard; the total hardness ranges from 100 to 228 ppm. It is present largely as calcium bicarbonate. The chloride content averages 100 ppm and no difficulty with salty or brackish water has been reported.⁴

Recharge to the Columbia aquifer occurs via direct infiltration of precipitation. Recharge to the Yorktown - Eastover aquifer occurs via downward leakage of precipitation through the Yorktown confining bed and through direct infiltration of precipitation in its outcrop belt, approximately 40 miles west of the site. Groundwater discharges from the water-table aquifer to surface water bodies and the underlying artesian aquifer systems.⁵

The direction of flow of the water-table aquifer would be predicted to be eastward toward discharge into the Southern Branch of the Elizabeth River, based upon the general correspondence of water-table contours to topographic contours. Flow within the artesian aquifer could be expected to be directed downdip, towards the east. It should be noted, though, that local aberrations in the geology or pump demands could alter this simplified regime, as indicated by groundwater sinks within stratigraphically lower aquifers.⁵

3.5 Climate and Meteorology

Data obtained from the Climatic Atlas of the United States show a normal annual total precipitation of 45 inches, with a mean annual lake evaporation of 40 inches for the Portsmouth area.¹¹ This produces an average net precipitation of five inches per year for the area.

The average annual temperature for the Norfolk and Portsmouth, Virginia area is 59.5°F. The coldest month is generally January, with a temperature of 39.9°F. The hottest month is July, with a mean temperature of 78.4°F.¹¹

3.6 Land Use

The subject site is located within a densely populated, urban area in Portsmouth, Virginia. The site is situated in a residential section of the city. The Norfolk Naval Shipyard is located approximately 1-1/4 mile south of the site.

ORIGINAL
(Red)

3.7 Population Distribution

According to 1980 census information, the population of Portsmouth is 104,577. Portions of Chesapeake and Norfolk are also located within the 3-mile radius of the site and have populations of 114,586 and 266,979, respectively.

The number of people on the Norfolk Naval Shipyard base, at any given time, averages 18,000. Of this, 13,134 are civilian and military employees, according to a 1983 census. The total number of people on the base during periods of greatest activity has gone as high as 25,000.¹²

The total estimated population within a 1-, 2-, and 3-mile radius of the site is 34,859, 107,880, and 250,948, respectively. There are an estimated 8,714 residents within a 1/4-mile radius of the site.¹²

3.8 Critical Environments

According to the United States Fish and Wildlife Service, there are no known endangered species inhabiting the Portsmouth area. However, the Bald Eagle is considered a transient species because it has no established habitat within the area. The closest known endangered species is the Red Caucasian Woodpecker (Picoides borealis) in Suffolk City, approximately 15 miles southwest of Portsmouth.

3.9 References

1. Sanford, Samuel, Virginia Geological Survey. The Underground Water Resources of the Coastal Plain Province of Virginia. Bulletin No. V, 1913.
2. Meng, A. A. III, and J. F. Harsh, United States Geologic Survey. Hydrogeologic Framework of the Virginia Coastal Plain. Open File Report 84-728, 1984.
3. Barker, W. J., and E. D. Bjorken, Virginia Division of Mineral Resources. Geology of the Norfolk South Quadrangle, Virginia. Publication 9, Text and 1:24,000 scale map, 1978.
4. Cederstrom, D. J., Virginia Geological Survey. Geology and Groundwater Resources of the Coastal Plain in Southeastern Virginia. Bulletin 63, 1945.
5. Geraghty and Miller, Incorporated. Availability of Groundwater in the Southeastern Virginia Groundwater Management Area. Virginia State Water Supply Commission. March 1979.
6. Walski, James, Portsmouth Water Company, with [REDACTED] NUS FIT 3. Telecon. August 6, 1985.
7. DuBuchananne, George D. Groundwater Resources of the Eastern Shore of Virginia and the James, York, and Rappahannock River Basins of Virginia East of the Fall Line. Hydrologic Investigations Atlas HA-284, 1968.
8. Bell, Rock, Portsmouth Public Works Engineering Department, with [REDACTED] NUS FIT 3. Telecon. August 7, 1985.
9. Virginia State Water Control Law (Title 62.1, Code of Virginia, Chapter 3.1, State Water Control Law; As amended through August 1980).

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7.5)

10. United States Geological Survey. Norfolk South, Virginia Quadrangle, Minute Series. Topographic Map. 1965, photorevised 1980.
11. United States Department of Commerce, National Climatic Center. Climatic Atlas of the United States. 1979.
12. Stefano, Maria, United States Census Bureau, with [REDACTED], NUS FIT 3. Telecon. August 7, 1985.
13. Masiello, Remo, Virginia State Water Control Board, with [REDACTED], NUS FIT 3. Telecon. June 4, 1987.

ORIGINAL
(Red)

SECTION 4

4.0 WASTE TYPES AND QUANTITIES

The facility is a child day care center. The site has no known history of generation or storage of hazardous wastes.

SECTION 5

ORIGINAL
(Red)

5.0 FIELD TRIP REPORT

5.1 Summary

On May 11, 1986, FIT 3 members **"Non-Responsive-Based on Revised Scope"** [REDACTED] accompanied and assisted EPA personnel during emergency sampling at the Portsmouth Day Care Center. A total of 20 soil samples and 8 wipe samples were collected at various locations selected by EPA personnel. Soil sample locations can be found in figure 3 of appendix B.

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Darius Ostrauskas
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-6488

5.2.2 At The Site

Robin Aitken
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-6679

Lisa Clark
Virginia Health Department
Bureau of Hazardous Water Management
11th Floor, Monroe Building
101 North 14th Street
Richmond, VA 23219
(804) 225-2667

Darius Ostrauskas
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-6488

TDD Number F3-8602-41
 EPA Number _____

5-3 SAMPLE LOG

Site Name Portsmouth Dry Care Center

TRAFFIC REPORTS			SAMPLING LOCATION	PHASE	SAMPLE DESCRIPTION	DATE	TIME	pH	COMMENTS/OBSERVATIONS	LABORATORY
Organic	Inorganic	High Hazard								
	MCF 199		Soil 1	Sol	Low Conc. Solids	6/11/86	0910		Rocky Mountain Lab	Analytical
	MCF 200		Soil 2	Sol			0915			
	MCD 757		Soil 3	Sol			0920			
	MCD 758		Soil 4	Sol			0925			
	MCD 759		Soil 5	Sol			0930			
	MCD 760		Soil 6	Sol			0935			
	MCD 761		Soil 7	Sol			0940			
	MCD 762		Soil 8	Sol			0943			
	MCD 763		Soil 9	Sol			0945			
	MCD 764		Soil 10	Sol			0948			
	MCD 765		Soil 11	Sol			0953			
	MCD 766		Soil 12	Sol			0958			
	MCD 767		Soil 13	Sol			1005			
	MCD 768		Soil 14	Sol			1015			
	MCD 366		Soil 15	Sol			1020			
	MCD 666		Soil 16	Sol			1025			
	MCD 667		Soil 17	Sol			1030			
	MCD 668		Background Soil #1	Sol			1130			
	MCD 669		Background Soil #2	Sol			1150			
	MCD 670		Blank	Sol			1230			

ORIGINAL
(Req)

5-3

SAMPLE LOG

Site Name Portsmouth Day Care Center

[illegible]

ORIGINAL
(Rev)

ORIGINAL
(Red)

5.4 Site Observations

- o The HNU background reading was .2 ppm; no readings above background were recorded.
- o The site property is approximately 100 by 200 feet in size.
- o The entire property is fenced.
- o All sample locations were chosen by Darius Ostrauskas, the EPA representative.
- o The mini-alert was set at X1; no readings above background were recorded.
- o Samples were collected in areas of bare soil.
- o Wipe samples were selected and obtained by EPA personnel.

5.5 PHOTOGRAPH LOG
5.4 PHOTOGRAPH LOG



Photo No. 1
Soil 1

ORIGINAL
(Red)



Photo Nos. 2,3
Soil 2

ORIGINAL
(Red)

PHOTOGRAPH LOG

Portsmouth Day Care Center
TDD No. F3-8612-41

R.P.
Photo 1

Soil 1

6/11/86

"Non-Responsive-Based on Revised Scope"

0910

ORIGINAL
(Red)

Photo No. 1
Soil 1

Portsmouth Day Care Center
TDD No. F3-8612-41

Portsmouth Day Care Center
TDD No. F3-8612-41

R.P.
Photo 2

Soil 2

Soil 2

6/11/86

6/11/86

"Non-Responsive-Based on Revised Scope"

0920

ORIGINAL
(Red)

Photo No. 2
Soil 2



Photo No. 4

Soil 3

**ORIGINAL
(Red)**



Photo No. 5

Soil 4

**ORIGINAL
(Red)**

Portsmouth Day Care Center
TDD No. F3-8612-41

R1P4
Photo 4

Soil 3

6/11/86

"Non-Responsive-Based on Revised Scope"

0920

ORIGINAL
(Red)

Photo No. 4
Soil 3

Portsmouth Day Care Center
TDD No. F3-8612-41

R1P5
Photo 5

Soil 4

6/11/86

"Non-Responsive-Based on Revised Scope"

0920

ORIGINAL
(Red)

Photo No. 5
Soil 4



Photo No. 6

Soil 5

**ORIGINAL
(Red)**



Photo No.7

Soil 6

**ORIGINAL
(Red)**

TDD No. F3-8612-41
Portsmouth Day Care Center

R₁P₆
Photo 6

Soil 5

6/11/86

Non-Responsive-Based on Revised Scope

0930

JANIDISO
(top)

Photo No. 6

Soil 5

Portsmouth Day Care Center
TDD No. F3-8612-41

R₁P₇
Photo 7

Soil 6

6/11/86

Non-Responsive-Based on Revised Scope

0935

JANIDISO
(top)

Photo No. 7

Soil 6



▼ Photo No. 8 ▼
Soil 7 ORIGINAL (Red)



▼ Photo No. 9 ▼
Soil 8 ORIGINAL (Red)

Portsmouth Day Care Center
TAD No. F3-8612-41

R, P
Photo 8

Soil 7

6/11/86

"Non-Responsive-Based on Revised Scope"

0940

ORIGINAL
(Red)

Photo No. 8

Soil 7

Portsmouth Day Care Center
TAD No. F3-8612-41

R, P
Photo 9

Soil 8

6/11/86

"Non-Responsive-Based on Revised Scope"

0943

ORIGINAL
(Red)

Photo No. 9

Soil 8



▼ Photo No. 10

Soil 9

ORIGINAL
(Red)



▼ Photo No. 11

Soil 10

ORIGINAL
(Red)

Portsmouth Day Care Center
TDD No. F3-8612-41

R, P₁₀
Photo 10

Soil 9

6/11/86

"Non-Responsive-Based on Revised Scope"

0945

ORIGINAL
(Red)

Photo No. 10
Soil 9

Portsmouth Day Care Center
TDD No. F3-8612-41

R, P₁₁
Photo 11

Soil 10

6/11/86

"Non-Responsive-Based on Revised Scope"

0950

ORIGINAL
(Red)

Photo No. 11
Soil 10



▼ Photo No. 12

Soil 11

▼ ORIGINAL
(Red)



▼ Photo No. 13

Soil 12

▼ ORIGINAL
(Red)

Portsmouth Day Care Center
TDD No. F3-8612-41

R.P. 12
Photo 12

Soil 11

6/11/86

"Non-Responsive-Based on Revised Scope"

0955

ORIGINAL
(Red)

Photo No. 12

Soil 11

Portsmouth Day Care Center
TDD No. F3-8612-41

R.P. 13
Photo 13

Soil 12

6/11/86

"Non-Responsive-Based on Revised Scope"

1000

ORIGINAL
(Red)

Photo No. 13

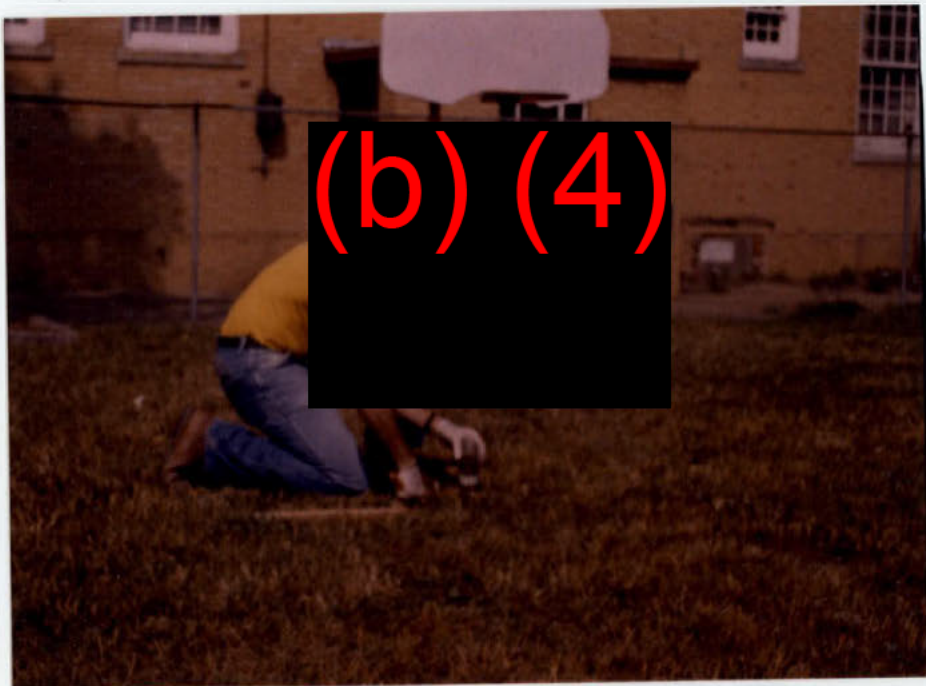
Soil 12



▼ Photo No. 14

Soil 13

ORIGINAL
(Red)



▼ Photo No. 15

Soil 14

ORIGINAL
(Red)

Portsmouth Day Care Center
TDD No. F3-8612-41

R₂P₂
Photo 14

Soil 13

12/11/86

"Non-Responsive-Based on Revised Scope"

1005

ORIGINAL
(Red)

Portsmouth Day Care Center
TDD No. F3-8612-41

R₂P₃
Photo 15

Soil 14

12/11/86

"Non-Responsive-Based on Revised Scope"

1015

ORIGINAL
(Red)



▼
Photo No. 16

Soil 16

▼
ORIGINAL
(Red)
▼



▼
Photo No. 17

Soil 17

▼
ORIGINAL
(Red)
▼

Portsmouth Day Care Center
TDD No. F3-8612-41

R2P5
Photo 16

Soil 16

6/11/86

Non-Responsive-Based on Revised Scope

1025

ORIGINAL
(Red)

Photo No. 16

Soil 16

Portsmouth Day Care Center
TDD No. F3-8612-41

R2P6
Photo 17

Soil 17

6/11/86

Non-Responsive-Based on Revised Scope

1030

ORIGINAL
(Red)

Photo No. 17

Soil 17



▼
 Photo No. 18
 Panorama of southern portion of building.
 ORIGINAL
 (Red)



▼
 Photo No. 19
 Panorama of southern portion of building.
 ORIGINAL
 (Red)

Portsmouth Day Care Center
TDD No. F3-8612-41

R₂P₂
Photo 18

Pan of Southern Portion of
Building

6/11/86

"Non-Responsive-Based on Revised Scope"

1115

Photo No. 18
Panorama of southern portion of building.
ORIGINAL (b)(7)

Portsmouth Day Care Center
TDD No. F3-8612-41

R₃P₃
Photo 19

Pan of southern portion of
building.

6/11/86

"Non-Responsive-Based on Revised Scope"

1115

Photo No. 19
Panorama of southern portion of building.
ORIGINAL (b)(7)



▼
Photo No. 20
Playground area.

ORIGINAL
(Red)



▼
Photo No. 21
Background soil #1
Lincoln and Third Avenues.

ORIGINAL
(Red)

Portsmouth Day Care Center
TDD ~~8612~~ No. FS-8612-41
8/23/87

R3P6
Photo 20

Playground Area

6/11/86

"Non-Responsive-Based on Revised Scope"

1120

ORIGINAL
(Red)

Photo No. 20
Playground Area

Portsmouth Day Care Center
TDD No. FS-8612-41

R3P7
Photo 21

Background Soil #1
Lincoln and 3rd Ave's

6/11/86

"Non-Responsive-Based on Revised Scope"

1135

ORIGINAL
(Red)

Photo No. 21
Background Soil #1
Lincoln and Third Avenues



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

F3-8612-41612
I. IDENTIFICATION
01 STATE | 02 SITE NUMBER
VA | 415

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) Portsmouth Day Care Center		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER Lincoln and Fifth Streets				
03 CITY Portsmouth		04 STATE VA	05 ZIP CODE 23704	06 COUNTY N/A	07 COUNTY CODE 740	08 CONG. DIST. 04
09 COORDINATES LATITUDE 36° 49' 30" N LONGITUDE 76° 18' 0" W		10 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN				

III. INSPECTION INFORMATION

01 DATE OF INSPECTION 6 / 11 / 86 MONTH DAY YEAR	02 SITE STATUS <input checked="" type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE	03 YEARS OF OPERATION 1975 present BEGINNING YEAR ENDING YEAR	
04 AGENCY PERFORMING INSPECTION (Check all that apply) <input type="checkbox"/> A. EPA <input checked="" type="checkbox"/> B. EPA CONTRACTOR NUS Corp. <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR <input type="checkbox"/> E. STATE <input type="checkbox"/> F. STATE CONTRACTOR <input type="checkbox"/> G. OTHER			

05 CHIEF INSPECTOR Non-Responsive-Based on Revised Scope	06 TITLE Environmental Scientist	07 ORGANIZATION NUS
	10 TITLE Assistant Manager	11 ORGANIZATION NUS
	Assistant Manager	NUS

Darius Ostrauskas	SIO	EPA	(215) 597-6488
Robin Aitken	Enforcement	EPA	(215) 597-6679
Lisa Clark	VA Health Department Representative		(804) 225-2667

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
			()
			()
			()
			()
			()
			()
			()
			()

17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT	18 TIME OF INSPECTION 0815	19 WEATHER CONDITIONS The weather was clear and windy with temperatures in the mid-70s.
---	-------------------------------	--

IV. INFORMATION AVAILABLE FROM

01 CONTACT Darius Ostrauskas	02 OF (Agency/Organization) U.S. EPA	03 TELEPHONE NO. (215) 597-6488		
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY FIT III	06 ORGANIZATION NUS	07 TELEPHONE NO. (215) 687-9510	08 DATE 1 / 20 / 87 MONTH DAY YEAR



**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION**

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
----------	----------------

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply) <input checked="" type="checkbox"/> A. SOLID <input type="checkbox"/> B. POWDER, FINES <input type="checkbox"/> C. SLUDGE <input type="checkbox"/> D. OTHER _____ <small>(Specify)</small>	02 WASTE QUANTITY AT SITE <small>(Measures of waste quantities must be independent)</small> TONS _____ CUBIC YARDS <u>Unknown</u> NO. OF DRUMS _____	03 WASTE CHARACTERISTICS (Check all that apply) <table border="0"> <tr> <td><input checked="" type="checkbox"/> A. TOXIC</td> <td><input type="checkbox"/> E. SOLUBLE</td> <td><input type="checkbox"/> I. HIGHLY VOLATILE</td> </tr> <tr> <td><input type="checkbox"/> B. CORROSIVE</td> <td><input type="checkbox"/> F. INFECTIOUS</td> <td><input type="checkbox"/> J. EXPLOSIVE</td> </tr> <tr> <td><input type="checkbox"/> C. RADIOACTIVE</td> <td><input type="checkbox"/> G. FLAMMABLE</td> <td><input type="checkbox"/> K. REACTIVE</td> </tr> <tr> <td><input checked="" type="checkbox"/> D. PERSISTENT</td> <td><input type="checkbox"/> H. IGNITABLE</td> <td><input type="checkbox"/> L. INCOMPATIBLE</td> </tr> <tr> <td></td> <td></td> <td><input type="checkbox"/> M. NOT APPLICABLE</td> </tr> </table>	<input checked="" type="checkbox"/> A. TOXIC	<input type="checkbox"/> E. SOLUBLE	<input type="checkbox"/> I. HIGHLY VOLATILE	<input type="checkbox"/> B. CORROSIVE	<input type="checkbox"/> F. INFECTIOUS	<input type="checkbox"/> J. EXPLOSIVE	<input type="checkbox"/> C. RADIOACTIVE	<input type="checkbox"/> G. FLAMMABLE	<input type="checkbox"/> K. REACTIVE	<input checked="" type="checkbox"/> D. PERSISTENT	<input type="checkbox"/> H. IGNITABLE	<input type="checkbox"/> L. INCOMPATIBLE			<input type="checkbox"/> M. NOT APPLICABLE
<input checked="" type="checkbox"/> A. TOXIC	<input type="checkbox"/> E. SOLUBLE	<input type="checkbox"/> I. HIGHLY VOLATILE															
<input type="checkbox"/> B. CORROSIVE	<input type="checkbox"/> F. INFECTIOUS	<input type="checkbox"/> J. EXPLOSIVE															
<input type="checkbox"/> C. RADIOACTIVE	<input type="checkbox"/> G. FLAMMABLE	<input type="checkbox"/> K. REACTIVE															
<input checked="" type="checkbox"/> D. PERSISTENT	<input type="checkbox"/> H. IGNITABLE	<input type="checkbox"/> L. INCOMPATIBLE															
		<input type="checkbox"/> M. NOT APPLICABLE															

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

[illegible]

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS	N/A		FDS		

VI. SOURCES OF INFORMATION (Cite specific references e.g., state files, sample analysis reports)

NUS sampling on May 11, 1986.

ORIGINAL
(Red)POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION02 ☐ OBSERVED (DATE: _____)☒ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

The potential does exist for contaminants to be leached into the water table. There is no groundwater used in the site area for potable supplies.

01 ☐ B. SURFACE WATER CONTAMINATION02 ☐ OBSERVED (DATE: _____)☒ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

Contaminated runoff could enter the city's storm water sewer system and be discharged into the Elizabeth River. There are no intakes on the river within the three-mile radius study area.

01 ☐ C. CONTAMINATION OF AIR02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

Unknown

No available information

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported

01 ☐ E. DIRECT CONTACT02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 60

04 NARRATIVE DESCRIPTION

Lead levels were detected in on-site surface samples. The population potentially affected would be the children and workers that attend the center on a daily basis.

01 ☐ F. CONTAMINATION OF SOIL02 ☐ OBSERVED (DATE: 05/11/86)☐ POTENTIAL☐ ALLEGED03 AREA POTENTIALLY AFFECTED: _____
(Acres)

04 NARRATIVE DESCRIPTION

Elevated levels of lead were detected in on-site samples.

01 ☐ G. DRINKING WATER CONTAMINATION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

Population within a three-mile radius is served by a public water supply system which obtains its water from sources outside the study area. There are no known surface water intakes located within the three-mile radius.

01 ☐ H. WORKER EXPOSURE/INJURY02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported

01 ☐ I. POPULATION EXPOSURE/INJURY02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 60

04 NARRATIVE DESCRIPTION

Lead levels were detected in on-site surface samples. The population potentially affected would be the children and workers that attend the center on a daily basis.

ORIGINAL
(Red)



**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT**
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None observed or reported

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (Include name(s) of species)

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None observed or reported

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None observed or reported

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES
(Spills, Runoff, Standing liquids, Leaking drums)

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

There are not on-site wastes. The exact route of contamination has not been determined.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None reported

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

Surface runoff from the site is collected by storm sewers.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Possible human exposure via the inhalation and ingestion routes.

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis reports)

NUS FIT III sampling on May 11, 1986.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

ORIGINAL
(Red)

L IDENTIFICATION

01 STATE 02 SITE NUMBER

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input type="checkbox"/> A. NPDES	None			
<input type="checkbox"/> B. UIC				
<input type="checkbox"/> C. AIR				
<input type="checkbox"/> D. RCRA				
<input type="checkbox"/> E. RCRA INTERIM STATUS				
<input type="checkbox"/> F. SPCC PLAN				
<input type="checkbox"/> G. STATE (Specify)				
<input type="checkbox"/> H. LOCAL (Specify)				
<input type="checkbox"/> I. OTHER (Specify)				
<input type="checkbox"/> J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
<input type="checkbox"/> A. SURFACE IMPOUNDMENT			<input checked="" type="checkbox"/> A. INCINERATION	<input checked="" type="checkbox"/> A. BUILDINGS ON SITE
<input type="checkbox"/> B. PILES			<input type="checkbox"/> B. UNDERGROUND INJECTION	
<input type="checkbox"/> C. DRUMS, ABOVE GROUND			<input type="checkbox"/> C. CHEMICAL/PHYSICAL	
<input type="checkbox"/> D. TANK, ABOVE GROUND			<input type="checkbox"/> D. BIOLOGICAL	1
<input type="checkbox"/> E. TANK, BELOW GROUND			<input type="checkbox"/> E. WASTE OIL PROCESSING	
<input type="checkbox"/> F. LANDFILL			<input type="checkbox"/> F. SOLVENT RECOVERY	
<input type="checkbox"/> G. LANDFARM			<input type="checkbox"/> G. OTHER RECYCLING/RECOVERY	
<input type="checkbox"/> H. OPEN DUMP			<input type="checkbox"/> H. OTHER (Specify)	
<input type="checkbox"/> I. OTHER None (Specify)				

07 COMMENTS

N/A

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one) N/A

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

There was no on-site disposal of wastes.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☐ NO

02 COMMENTS

The site is an active day care center. The entire area is fenced.

VI. SOURCES OF INFORMATION (See specific references, e.g. state files, sample analysis, reports)

NUS FIT III sampling performed on May 11, 1986.

ORIGINAL
(Red)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY
(Check as applicable)

SURFACE

WELL

COMMUNITY

A. ☒B. ☒

NON-COMMUNITY

C. ☐D. ☐

02 STATUS

ENDANGERED

AFFECTED

MONITORED

A. ☐B. ☐C. ☐D. ☐E. ☐F. ☐

03 DISTANCE TO SITE

A. 16 (mi)

B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING☐ B. DRINKING

(Other sources available)

COMMERCIAL, INDUSTRIAL, IRRIGATION

(No other water sources available)

☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION

(Limited other sources available)

☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER

0

03 DISTANCE TO NEAREST DRINKING WATER WELL

N/A (mi)

04 DEPTH TO GROUNDWATER

5 to 8 (ft)

05 DIRECTION OF GROUNDWATER FLOW

unknown06 DEPTH TO AQUIFER
OF CONCERN5 to 8 (ft)07 POTENTIAL YIELD
OF AQUIFER55,000 (gpd)

08 SOLE SOURCE AQUIFER

☐ YES☒ NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

The only known use of groundwater in the site area is for industrial purposes.

10 RECHARGE AREA

☒ YES☐ NO

COMMENTS Water table aquifer is recharged
by precipitation

11 DISCHARGE AREA

☐ YES☒ NO

COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION
DRINKING WATER SOURCE☐ B. IRRIGATION, ECONOMICALLY
IMPORTANT RESOURCES☐ C. COMMERCIAL, INDUSTRIAL☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:

AFFECTED

DISTANCE TO SITE

Southern Branch of the Elizabeth River☐3,500 ft

(mi)

Elizabeth River☐6,000 ft

(mi)

☐

(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE

A. 34,859

NO. OF PERSONS

TWO (2) MILES OF SITE

B. 107,880

NO. OF PERSONS

THREE (3) MILES OF SITE

C. 250,948

NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

500 ft (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

Unknown - urban area

04 DISTANCE TO NEAREST OFF-SITE BUILDING

500 ft (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site is located in an urban area within the city of Portsmouth. The population of Portsmouth is 104,577.

ORIGINAL
(Red)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☒ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

N/A

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK

2,700 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE

Unknown (ft)

05 SOIL pH

Unknown

06 NET PRECIPITATION

5 (in)

07 ONE YEAR 24 HOUR RAINFALL

3 (in)

08 SLOPE
SITE SLOPE

0 - 3 %

DIRECTION OF SITE SLOPE

East

TERRAIN AVERAGE SLOPE

0 - 3 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10

N/A ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE

OTHER

A. 8,000 ft (mi)

B. 4,000 ft (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

N/A (mi)

ENDANGERED SPECIES:

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL

RESIDENTIAL AREAS; NATIONAL/STATE PARKS,
FORESTS, OR WILDLIFE RESERVESAGRICULTURAL LANDS
PRIME AG LAND AG LAND

A. 1,000 ft (mi)

B. 500 ft (mi)

C. N/A (mi) D. (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The area surrounding the site is generally flat with a slope towards the east toward the Southern Branch of the Elizabeth River.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

U.S.G.S. 7.5 Minute Series topographic map for Norfolk South Quadrangle.
United States Census Bureau, 1980.

ORIGINAL
(Red)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			Presently
SURFACE WATER			available
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	20	RNAL	
VEGETATION			
OTHER Wipe	8	CRL	

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
None	

IV. PHOTOGRAPHS AND MAPS

01 TYPE <input checked="" type="checkbox"/> GROUND <input type="checkbox"/> AERIAL	02 IN CUSTODY OF EPA NUS FIT III <small>(Name of organization or individual)</small>
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS EPA, NUS FIT III

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

None

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

NUS FIT III and EPA files.

ORIGINAL
(Red)POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. CURRENT OWNER(S)				PARENT COMPANY (If applicable)			
01 NAME Portsmouth Redevelopment Housing Authority		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 801 Crawford Street		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY Portsmouth		06 STATE VA	07 ZIP CODE 23704	12 CITY		13 STATE	14 ZIP CODE
01 NAME N/A		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME N/A		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME N/A		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME N/A		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
III. PREVIOUS OWNER(S) (List most recent first)				IV. REALTY OWNER(S) (If applicable, list most recent first)			
01 NAME N/A		02 D+B NUMBER		01 NAME N/A		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
01 NAME N/A		02 D+B NUMBER		01 NAME N/A		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
01 NAME N/A		02 D+B NUMBER		01 NAME N/A		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)							
NUS FIT III file information							

ORIGINAL
(Red)



**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION**

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. CURRENT OPERATOR (Provide if different from owner)

OPERATOR'S PARENT COMPANY (If applicable)

01 NAME Portsmouth Day Care Center		02 D+B NUMBER		10 NAME N/A		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Lincoln and Fifth Streets		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY Portsmouth	06 STATE VA	07 ZIP CODE 23704		14 CITY	15 STATE	16 ZIP CODE	
08 YEARS OF OPERATION	09 NAME OF OWNER						

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 NAME N/A		02 D+B NUMBER		10 NAME N/A		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		14 CITY	15 STATE	16 ZIP CODE	
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD						

01 NAME N/A		02 D+B NUMBER		10 NAME N/A		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		14 CITY	15 STATE	16 ZIP CODE	
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD						

01 NAME N/A		02 D+B NUMBER		10 NAME N/A		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		14 CITY	15 STATE	16 ZIP CODE	
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD						

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA file information



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

ORIGINAL
(Red)

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. ON-SITE GENERATOR

01 NAME N/A	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE 07 ZIP CODE	

III. OFF-SITE GENERATOR(S)

01 NAME N/A	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME N/A	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME N/A	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME N/A	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

EPA file information

ORIGINAL
(Red)



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE 02 SITE NUMBER

II. PAST RESPONSE ACTIVITIES

01 <input type="checkbox"/> A. WATER SUPPLY CLOSED 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> D. SPILLED MATERIAL REMOVED 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> F. WASTE REPACKAGED 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> H. ON SITE BURIAL 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> L. ENCAPSULATION 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> N. CUTOFF WALLS 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION None	02 DATE _____	03 AGENCY _____

ORIGINAL
(Red)



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ S. CAPPING/COVERING
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ T. BULK TANKAGE REPAIRED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ U. GROUT CURTAIN CONSTRUCTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ V. BOTTOM SEALED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ W. GAS CONTROL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ X. FIRE CONTROL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ Y. LEACHATE TREATMENT
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ Z. AREA EVACUATED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ 1. ACCESS TO SITE RESTRICTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ 2. POPULATION RELOCATED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

01 ☐ 3. OTHER REMEDIAL ACTIVITIES
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA File Information

ORIGINAL
(Red)



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

None

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA file information

APPENDIX C

PROJECT NAME: Portsmouth Day Center
TDD NO: 13-8606-01

EPA SITE NO.:
REGION: III

QUALITY ASSURANCE REVIEW OF
INORGANIC ANALYTICAL DATA PACKAGE

ORIGINAL
(Red)

Case No.: 6079
Contract No.: 68-01-7068
Contract Laboratory: RMA Laboratory
Applicable IFB No.: WAB4-J097
Reviewer: non responsive based on revised scope
Review Date: _____

Applicable Sample No's.:

MCF199, MCF200, MCD757, MCD758,
MCD759, MCD760, MCD761, MCD762,
MCD763, MCD764, MCD765,
MCD766, MCD767, MCD768, MCD769,
MCD366, MCD666, MCD667, MCD668,
MCD669, and MCD670.

The inorganic analytical data for this case has been reviewed. The quality assurance evaluation is summarized in the following table:

Reviewer's Evaluation*	Fraction			
	TASK I ICP or AA METALS	TASK II FURNACE AA METALS	TASK II COLD VAPOR AA MERCURY	TASK III CYANIDE
Acceptable			✓	
Acceptable with exceptions	✓ ₁	✓ _{2, 3}		N/R
Questionable				
Unacceptable				

* Definitions of the evaluation score categories are listed on next page.

This evaluation was based upon an analysis of the review items indicated below:

- | | |
|--|---|
| <input checked="" type="checkbox"/> DATA COMPLETENESS | <input checked="" type="checkbox"/> INITIAL CALIBRATION VERIFICATION |
| <input checked="" type="checkbox"/> BLANK ANALYSIS RESULTS | <input checked="" type="checkbox"/> CONTINUING CALIBRATION VERIFICATION |
| <input type="checkbox"/> MATRIX SPIKE RESULTS | <input checked="" type="checkbox"/> INTERFERENCE QC RESULTS |
| <input checked="" type="checkbox"/> DUPLICATE ANALYSIS RESULTS | <input checked="" type="checkbox"/> DETECTION LIMITS RESULTS |
| <input type="checkbox"/> STANDARD ADDITIONS RESULTS | <input checked="" type="checkbox"/> INSTRUMENT SENSITIVITY REPORTS |
| <input checked="" type="checkbox"/> QUANTITATIVE CALCULATIONS | |

Data review forms are attached for each of the review items indicated above.

✚ No errors noted, no form attached.

● Spot Check performed.

N/R - Not Required

Comments:

- 1) Please see blank analysis results (contamination)
- 2) Please see matrix spike recovery (detection limit)
- 3) Please see text (insufficient documentation)

DATA EVALUATION SCORE CATEGORIES

ORIGINAL
(Red)

ACCEPTABLE: Data is within established control limits, or the data which is outside established control limits does not affect the validity of the analytical results.

ACCEPTABLE WITH EXCEPTION(S): Data is not completely within established control limits. The deficiencies are identified and specific data is still valid, given certain qualifications which are listed below.

QUESTIONABLE: Data is not within established control limits. The deficiencies bring the validity of the entire data set into question. However, the data validity is neither proved nor disproved by the available information.

UNACCEPTABLE: Data is not within established control limits. The deficiencies imply the results are not meaningful.

DATA COMPLETENESS		CONC./ MATRIX																
TRAFFIC REPORT # MC			F199	F200	D757	D758	D759	D760	D761	D762	D763	D764	D765	D766	D767	D768	D769	D770
LAB I.D. #																		
FIELD QC	BLANK																	
	DUPLICATE	✓																
	SPIKE	✓																
TASK I: ICAP OR AA METALS	RAW DATA	✓																
	TAB. RESULTS	✓																
	TAB. D.L.'s	✓																
	QA FORM	✓																
	ICAP INTER. QC	✓																
	INSTR. SENS.	✓																
TASK II: FURNACE AA: METALS	RAW DATA	✓																
	TAB. RESULTS	✓																
	TAB. D.L.'s	✓																
	QA FORM	✓																
	INSTR. SENS.	✓																
TASK II: COLD VAPOR AA: MERCURY	RAW DATA	✓																
	TAB. RESULTS	✓																
	TAB. D.L.'s	✓																
	QA FORM	✓																
	INSTR. SENS.	✓																
TASK III: CYANIDE	RAW DATA	✓																
	TAB. RESULTS	✓																
	TAB. D.L.'s	✓																
	QA FORM.	✓																
	INSTR. SENS.	✓																
OTHER (SPECIFY):	RAW DATA																	
	TAB. RESULTS																	
	TAB. D.L.'s																	
	QA FORM																	
	INSTR. SENS.																	
OTHER (SPECIFY):	RAW DATA																	
	TAB. RESULTS																	
	TAB. D.L.'s																	
	QA FORM																	
	INSTR. SENS.																	

COMMENTS:

ORIGINAL
/OCT/EC

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FOR SAMPLE ANALYTICAL DATA SUMMARY.

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM RAW DATA

Form V

Q.C. Report No. 5607100029
ORIGINAL
(Red)

SPIKE SAMPLE RECOVERY

LAB NAME ROCKY MOUNTAIN ANALYTICALCASE NO. 6079/2328CDATE 6-20-86EPA Sample No. MCF199Lab Sample ID No. -Units mg/kgMATRIX SOIL

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Metals:					
1. ALUMINUM	75-125	1870	1760	NR	
2. ANTIMONY	75-125	213	13U	250	85
3. ARSENIC	75-125	22	5U	20	110
4. BARIUM	75-125	901	[42]	1000	86
5. BERYLLIUM	75-125	23	0.5U	25	92
6. CADMIUM	75-125	26	2.5U	25	104
7. CALCIUM	75-125	[2230]	[2220]	NR	
8. CHROMIUM	75-125	99	6.4	100	93
9. COBALT	75-125	242	3.5U	250	97
10. COPPER	75-125	189	60	125	103
11. IRON	75-125	3840	2800	NR	
12. LEAD	75-125	513	262	250	100
13. MAGNESIUM	75-125	[369]	[394]	NR	
14. MANGANESE	75-125	300	58	250	97
15. MERCURY	75-125	0.6	0.4 0.2	0.5	80
16. NICKEL	75-125	244	[5.1]	250	96
17. POTASSIUM	75-125	[413]	[314]	NR	
18. SELENIUM	75-125	2.5U	2.5U	5	0
19. SILVER	75-125	21	1.5U	25	84
20. SODIUM	75-125	327U	327U	NR	
21. THALLIUM	75-125	24	5U	25	96
22. TIN	75-125	270	30	250	96
23. VANADIUM	75-125	266	[14]	250	101
24. ZINC	75-125	878	608	250	108
Other:					
Cyanide					
75-125					

%R = [(SSR - SR)/SA] x 100

"R"- out of control

Comments: (1) The actual detection limit for selenium in sample MCF199 may be higher than reported.

Form VI

ORIGINAL
(R0)0030Q.C. Report No. 56071

DUPLICATES

LAB NAME ROCKY MOUNTAIN ANALYTICALDATE 6-20-86CASE NO. 6079/2328CEPA Sample No. MCF199DLab Sample ID No. -Units mg/kgMatrix SOIL

Compound	Control Limit ¹	Sample(S)	Duplicate(D)	RPD ²
Metals:				
1. ALUMINUM		1760	1870	6.1
2. ANTIMONY		13U	13U	NC
3. ARSENIC		5U	5U	NC
4. BARIUM		[42]	[48]	NC
5. BERYLLIUM		0.5U	0.5U	NC
6. CADMIUM		2.5U	2.5U	NC
7. CALCIUM		[2220]	[2470]	NC
8. CHROMIUM		6.4	7.3	13
9. COBALT		3.5U	3.5U	NC
10. COPPER		60	64	6.5
11. IRON		2800	2590	7.8
12. LEAD		262	260	0.77
13. MAGNESIUM		[394]	[360]	NC
14. MANGANESE		58	59	1.7
15. MERCURY		0.2	0.2	0
16. NICKEL		[5.1]	[4.8]	NC
17. POTASSIUM		[314]	[364]	NC
18. SELENIUM		2.5U	2.5U	NC
19. SILVER		1.5U	1.5U	NC
20. SODIUM		327U	327U	NC
21. THALLIUM		5U	5U	NC
22. TIN		30	28	6.9
23. VANADIUM		[14]	[15]	NC
24. ZINC		608	571	6.3
Other:				
90 Solids		98	97	1.0
Cyanide				

X Out of Control

¹ To be added at a later date.² $RPD = [(S-D)/((S+D)/2)] \times 100$

NC - Non calculable RPD due to value(s) less than CRDL

ALL RECOVERIES ARE ACCEPTABLE

ORIGINAL
(Red) Yes ☒

Exceptions:

WA 84-J092 :

Yes ✓

[illegible]

Documentation indicates interference QC samples were run before and after every ten samples: Yes ☒

Exceptions:

WA84-J092 :

Yes ☒

[illegible]

Q.C. Report No. 56071ORIGINAL
(Red)

00028

ICP INTERFERENCE CHECK SAMPLE

LAB NAME ROCKY MOUNTAIN ANALYTICALCASE NO 6079/2328CDATE 6-20-86Check Sample I.D. INT CHKCheck Sample Source EMSL-LVUnits mg/L

Compound	Control Limits ¹		True ²	Initial		Final	
	Mean	Std. Dev.		Observed	%R	Observed	%R
Metals:							
1. ALUMINUM			503	422	84	431	86
2. ANTIMONY				0.026U		0.026U	
3. ARSENIC				0.029U		0.029U	
4. BARIUM			0.47	0.43	91	0.43	91
5. BERYLLIUM			0.46	0.47	102	0.43	93
6. CADMIUM			0.96	0.94	98	1	104
7. CALCIUM			499	519	104	515	103
8. CHROMIUM			0.98	0.9	92	0.89	91
9. COBALT			0.48	0.48	100	0.47	98
10. COPPER			0.51	0.5	98	0.49	96
11. IRON			198	186	94	183	92
12. LEAD	4.7	0.14	4.6	4.7	100	4.8	102
13. MAGNESIUM			497	525	106	541	109
14. MANGANESE			0.52	0.54	104	0.53	102
15. MERCURY							
16. NICKEL			0.91	0.89	98	0.87	96
17. POTASSIUM				0.54U		0.54U	
18. SELENIUM							
19. SILVER			0.99	0.96	97	1	101
20. SODIUM				5.4		7.1	
21. THALLIUM							
22. TIN				0.016U		0.016U	
23. VANADIUM			0.47	0.48	102	0.47	100
24. ZINC			0.95	0.9	95	0.92	97
Other:							

¹ Mean value based on n = 37.² True value of EPA ICP Interference Check Sample or contractor standard.

ALL RECOVERIES ARE ACCEPTABLE

ORIGINAL
(Red)

Detection Limits Results

Detection limits were reported for all samples analyzed: Yes ☒ No ☐

Exceptions: _____

Detection limits were less than or equal to the required detection limits specified in WA84-J092. Yes ☒ No ☐

Exceptions: _____

Instrument Sensitivity Reports

Instrument sensitivity reports were documented for all parameters:

Yes ☒ No ☐

Comments: _____

Other Remarks Concerning this Case:

APPENDIX D.

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCF199

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium
Matrix: Water Soil X Sludge Other

mg/kg dry weight

1. ALUMINUM	1790	P	13. MAGNESIUM	[402]	P
2. ANTIMONY	13U	P	14. MANGANESE	60	P
3. ARSENIC	5.1U	F	15. MERCURY	0.2	CV
4. BARIUM	[43]	P	16. NICKEL	[5.2]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	[320]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[2270]	P	19. SILVER	1.5U	P
8. CHROMIUM	6.5	P	20. SODIUM	333U	P
9. COBALT	3.6U	P	21. THALLIUM	5.1U	F
10. COPPER	62	P	22. TIN	31	P
11. IRON	2860	P	23. VANADIUM	[14]	P
12. LEAD	268	P	24. ZINC	620	P

Cyanide NR Percent Solids (%) 98

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager JML

Form I

ORIGINAL
(Per)
00004

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCF200

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	4990	P	13. MAGNESIUM	[433]	P
2. ANTIMONY	13U	P	14. MANGANESE	58	P
3. ARSENIC	8.2	F	15. MERCURY	0.4	CV
4. BARIUM	[64]	P	16. NICKEL	[6.2]	P
5. BERYLLIUM	0.52U	P	17. POTASSIUM	[380]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[1670]	P	19. SILVER	1.5U	P
8. CHROMIUM	9.7	P	20. SODIUM	337U	P
9. COBALT	3.6U	P	21. THALLIUM	5.2U	F
10. COPPER	54	P	22. TIN	27	P
11. IRON	4030	P	23. VANADIUM	[19]	P
12. LEAD	219	P	24. ZINC	172	P

Cyanide NR Percent Solids (%) 97

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager JAL

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD757

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	4880	P	13. MAGNESIUM	[433]	P
2. ANTIMONY	13U	P	14. MANGANESE	58	P
3. ARSENIC	6.7	F	15. MERCURY	0.3	CV
4. BARIUM	108	P	16. NICKEL	[7.3]	P
5. BERYLLIUM	0.52U	P	17. POTASSIUM	[404]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	3030	P	19. SILVER	1.5U	P
8. CHROMIUM	10	P	20. SODIUM	337U	P
9. COBALT	3.6U	P	21. THALLIUM	5.2U	F
10. COPPER	82	P	22. TIN	37	P
11. IRON	4310	P	23. VANADIUM	[21]	P
12. LEAD	299	P	24. ZINC	249	P

Cyanide NR Percent Solids (%) 97

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager JML

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD758

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	2700	P	13. MAGNESIUM	[428]	P
2. ANTIMONY	13U	P	14. MANGANESE	44	P
3. ARSENIC	5.1U	F	15. MERCURY	0.2	CV
4. BARIUM	[31]	P	16. NICKEL	[4.3]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	[407]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[802]	P	19. SILVER	1.5U	P
8. CHROMIUM	8.6	P	20. SODIUM	333U	P
9. COBALT	3.6U	P	21. THALLIUM	5.1U	F
10. COPPER	32	P	22. TIN	25	P
11. IRON	3080	P	23. VANADIUM	[13]	P
12. LEAD	121	P	24. ZINC	89	P

Cyanide NR Percent Solids (%) 98

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager JML

U.S. EPA Contract Laboratory Program
Sample Management Office
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703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD759

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	2620	P	13. MAGNESIUM	[275]	P
2. ANTIMONY	13U	P	14. MANGANESE	46	P
3. ARSENIC	5.2U	F	15. MERCURY	0.2	CV
4. BARIUM	[40]	P	16. NICKEL	[6.3]	P
5. BERYLLIUM	0.52U	P	17. POTASSIUM	279U	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[732]	P	19. SILVER	1.5U	P
8. CHROMIUM	8.4	P	20. SODIUM	337U	P
9. COBALT	3.6U	P	21. THALLIUM	5.2U	F
10. COPPER	67	P	22. TIN	37	P
11. IRON	3150	P	23. VANADIUM	[20]	P
12. LEAD	278	P	24. ZINC	681	P

Cyanide NR Percent Solids (%) 97

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

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(Red)

Form I

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EPA Sample No. 00008
MCD760

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328CQC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium
Matrix: Water Soil X Sludge Other

mg/kg dry weight

1. ALUMINUM	3150	P	13. MAGNESIUM	[376]	P
2. ANTIMONY	13U	P	14. MANGANESE	54	P
3. ARSENIC	5.1U	F	15. MERCURY	0.1	CV
4. BARIUM	[48]	P	16. NICKEL	[6.5]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	[370]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[1140]	P	19. SILVER	1.5U	P
8. CHROMIUM	10	P	20. SODIUM	333U	P
9. COBALT	3.6U	P	21. THALLIUM	5.1U	F
10. COPPER	62	P	22. TIN	30	P
11. IRON	3360	P	23. VANADIUM	[18]	P
12. LEAD	185	P	24. ZINC	188	P

Cyanide NRPercent Solids (%) 98

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

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703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD761

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium
Matrix: Water Soil X Sludge Other

mg/kg dry weight

1. ALUMINUM	680	P	13. MAGNESIUM	[158]	P
2. ANTIMONY	13U	P	14. MANGANESE	10	P
3. ARSENIC	5.1U	F	15. MERCURY	0.1u	CV
4. BARIUM	[10]	P	16. NICKEL	3U	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	274U	P
6. CADMIUM	2.5U	P	18. SELENIUM	2.5U	F R
7. CALCIUM	[264]	P	19. SILVER	1.5U	P
8. CHROMIUM	[3.3]	P	20. SODIUM	330U	P
9. COBALT	3.5U	P	21. THALLIUM	5.1U	F
10. COPPER	[6.6]	P	22. TIN	25	P
11. IRON	1040	P	23. VANADIUM	[6.8]	P
12. LEAD	28	P	24. ZINC	35	P

Cyanide NR

Percent Solids (%) 99

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

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703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD762

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium
Matrix: Water Soil X Sludge Other

mg/kg dry weight

1. ALUMINUM	1930	P	13. MAGNESIUM	[235]	P
2. ANTIMONY	13U	P	14. MANGANESE	28	P
3. ARSENIC	5.1U	F	15. MERCURY	0.1u	CV
4. BARIUM	119	P	16. NICKEL	[6]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	274U	P
6. CADMIUM	2.5U	P	18. SELENIUM	2.5U	F R
7. CALCIUM	[734]	P	19. SILVER	1.5U	P
8. CHROMIUM	15	P	20. SODIUM	330U	P
9. COBALT	3.5U	P	21. THALLIUM	5.1U	F
10. COPPER	38	P	22. TIN	28	P
11. IRON	2450	P	23. VANADIUM	[12]	P
12. LEAD	312	P	24. ZINC	212	P

Cyanide NR

Percent Solids (%) 99

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

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00011

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EPA Sample No.
MCD763

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	852	P	13. MAGNESIUM	151U	P
2. ANTIMONY	13U	P	14. MANGANESE	17	P
3. ARSENIC	5.1U	F	15. MERCURY	0.1	CV
4. BARIUM	[16]	P	16. NICKEL	[3.7]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	277U	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[522]	P	19. SILVER	1.5U	P
8. CHROMIUM	5.2	P	20. SODIUM	333U	P
9. COBALT	3.6U	P	21. THALLIUM	5.1U	F
10. COPPER	18	P	22. TIN	27	P
11. IRON	1250	P	23. VANADIUM	[5.2]	P
12. LEAD	65	P	24. ZINC	62	P

Cyanide NR

Percent Solids (%) 98

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

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U.S. EPA Contract Laboratory Program
Sample Management Office
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703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD764

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium
Matrix: Water Soil X Sludge Other

mg/kg dry weight

1. ALUMINUM	3090	P	13. MAGNESIUM	[289]	P
2. ANTIMONY	13U	P	14. MANGANESE	46	P
3. ARSENIC	5.1U	F	15. MERCURY	0.1	CV
4. BARIUM	126	P	16. NICKEL	[4.2]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	[296]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[1230]	P	19. SILVER	1.5U	P
8. CHROMIUM	15	P	20. SODIUM	333U	P
9. COBALT	3.6U	P	21. THALLIUM	5.1U	F
10. COPPER	55	P	22. TIN	24	P
11. IRON	5370	P	23. VANADIUM	[13]	P
12. LEAD	381	P	24. ZINC	337	P

Cyanide NR Percent Solids (%) 98

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager JML

SECTION 6

6.0 LABORATORY DATA

6.1 Sample Data Summary

GLOSSARY

Data Summary Footnotes

In the data summary which follows, data qualifier code letters are associated with these definitions:

- ◇ This concentration reported by laboratory, but evidence to doubt presence of compound/element (may or may not be present).
- J Approximate value; detected below limit of accurate quantitation.
- UF The material was analyzed for, but was not detected. The associated numerical value is the estimated sample quantitation limit.
- F The associated numerical value is an estimated quantity because quality control criteria were not met. (See Quality Assurance Review for specifics as to magnitude or direction of variability or bias.)
- R Quality Control indicates that data are unusable (compounds may or may not be present). Resampling and/or reanalysis is necessary for verification.
- N Evidence for presence of material is presumptive (tentative identification).
- H Suspected Unreliable Results: Even though data validation criteria have been met, this result may still be suspect because false positives are a frequent problem with this particular compound or method of analysis. To prove validity, corroboration with additional analytical results or supporting information would be recommended.

TDD Number: F3-8612-41
 EPA Number: _____

SAMPLE DATA SUMMARY
 TARGET COMPOUNDS

☐ Organic ☒ Inorganic

Site Name: Portsmouth Day Center
 Date of Sample: 6-17-86

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Remarks
MC6199	soil # 1	SOL	mg/kg	1790		[43]			[2270]	6.5			62	2860	268	[402]	
MC6200	soil # 2	SOL	mg/kg	4990		8.2 [64]			[1670]	9.7			54	4030	219	[433]	
MC6257	soil # 3	SOL	mg/kg	4880		6.7 108			3030	10			82	4310	299	[433]	
MC6258	soil # 4	SOL	mg/kg	2700		[31]			[802]	8.6			32	3080	121	[428]	
MC6259	soil # 5	SOL	mg/kg	2620		[40]			[732]	8.4			67	3150	278	[275]	
MC6260	soil # 6	SOL	mg/kg	3150		[48]			[1140]	10			62	3360	185	[376]	
MC6261	soil # 7	SOL	mg/kg	680		[10]			[264]	[3.3]			[6.6]	1040	28	[158]	
MC6262	soil # 8	SOL	mg/kg	1930		119			[734]	15			38	2450	312	[235]	
MC6263	soil # 9	SOL	mg/kg	852		[16]			[522]	5.2			18	1250	65		
MC6264	soil # 10	SOL	mg/kg	3090		126			[1230]	15			55	5370	381	[289]	
MC6265	soil # 11	SOL	mg/kg	10,000		[5.1] [80]			[2170]	2.9 [5.3]			39	19900	97	6840	
MC6266	soil # 12	SOL	mg/kg	6070		[103]			3560	7.9			17	2890	193	[442]	
MC6267	soil # 13	SOL	mg/kg	7200		[59]			[2340]	20 [4.6]			39	15300	108	5780	
MC6268	soil # 14	SOL	mg/kg	5190		[49]			[1480]	6.4			14	2250	62	[442]	

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

ORIGINAL
 (REV)

TDD Number F3-8613-41
EPA Number _____

STEDAMM
TARGET COMPOUNDS
☐ Organic ☒ Inorganic

Site Name Portsmouth Bay Center
Date of Sample 6-17-86

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Tin	Vanadium	Zinc	Cyanide	Percent Solids (%)	Remarks
MC6199	Soil # 1	SoL	mg/kg	60	0.2	[5.2]	[320]					31 [◇]	[14]	620		98%	
MC6200	Soil # 2	SoL	mg/kg	58	0.4	[6.2]	[380]					27 [◇]	[19]	172		97%	
MC6757	Soil # 3	SoL	mg/kg	58	0.3	[7.3]	[404]					37 [◇]	[21]	249		97%	
MC6758	Soil # 4	SoL	mg/kg	44	0.2	[4.3]	[407]					25 [◇]	[13]	89		98%	
MC6759	Soil # 5	SoL	mg/kg	46	0.2	[6.3]						37 [◇]	[20]	681		97%	
MC6760	Soil # 6	SoL	mg/kg	54	0.1	[6.5]	[370]					30 [◇]	[18]	188		98%	
MC6761	Soil # 7	SoL	mg/kg	10								25 [◇]	[68]	35		99%	
MC6762	Soil # 8	SoL	mg/kg	28		[6]						28 [◇]	[12]	212		99%	
MC6763	Soil # 9	SoL	mg/kg	17	0.1	[3.7]						27 [◇]	[5.2]	62		98%	
MC6764	Soil # 10	SoL	mg/kg	46	0.1	[4.2]	[296]					24 [◇]	[13]	337		98%	
MC6765	Soil # 11	SoL	mg/kg	435	0.2	[18]	7720		[419]			29 [◇]	41	173		99%	
MC6766	Soil # 12	SoL	mg/kg	41	0.4	[6.2]	538					29 [◇]	[12]	139		95%	
MC6767	Soil # 13	SoL	mg/kg	341		[11]	5870		[366]			31 [◇]	37	302		97%	
MC6768	Soil # 14	SoL	mg/kg	28		[4.8]	[672]					[20]	[11]	59		95%	

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

ORIGINAL
(Rev)

TDD Number F3-8612-41
 EPA Number _____

SAMPLE DATA SUMMARY
 TARGET COMPOUNDS

☐ Organic ☒ Inorganic

Site Name Portsmouth Day Center
 Date of Sample 6-17-86

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Remarks
MC0366	Soil #15	SOL	mg/kg	4680		[40]			[1140]	[5.1]		[8.6]	2050	29	[392]		
MC0666	Soil #16	SOL	mg/kg	6280		[5.2]	313		4140	13		51	6350	727	[731]		
MC0667	Soil #17	SOL	mg/kg	5240		6.1	428	3.5	8710	22		99	38600	1350	[828]		
MC0668	Background soil 1	SOL	mg/kg	11900		7.1	[65]		[1290]	18		17	7540	61	[1020]		
MC0669	Background soil 2	SOL	mg/kg	4300		8.6	115		[2200]	11		26	4120	255	[415]		
MC0670	Field blank	SOL	mg/kg														

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

ORIGINAL
 (Red)

TDD Number 83-8612-41
 EPA Number _____

LEAD ☐ ARSENIC ☐
 TARGET COMPOUNDS

☐ Organic ☒ Inorganic

Site Name Portsmouth Day Center
 Date of Sample 6-17-86

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Tin	Vanadium	Zinc	Cyanide	Percent Solids (%)	Remarks
MC0666	Soil # 15	SoL	mg/kg	17		[49]	[496]					[18] [◇]	[9.5]	68		94%	
MC0666	Soil # 16	SoL	mg/kg	106	0.8	[94]	[829]			[480] [◇]		42 [◇]	[21]	602		97%	
MC0667	Soil # 17	SoL	mg/kg	293	1.0	[13]	[797]			[571] [◇]		348 [◇]	[23]	1400		98%	
MC0668	Background soil 1	SoL	mg/kg	24		[7.2]	[734]			[551] [◇]		27 [◇]	28	50		98%	
MC0669	Background soil 2	SoL	mg/kg	56	0.8	[7.4]	[543]			[469] [◇]		29 [◇]	[12]	304		93%	
MC0670	Field blank	SoL	mg/kg									[13]				100%	

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

◇ Denotes results of questionable qualitative significance based upon quality assurance review of data.

ORIGINAL
(Red)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

ORIGINAL
(Red)

301-224-2740
FTS-922-3752

DATE : June 30, 1986

SUBJECT: Metals Determinations of Portsmouth Day Care Center
Superfund-Remedial, 6TFA03RHZZ, 860617-13 - 20, (6/20/86 - 6/25/86)

FROM : Stephen Buchanan ^{SEB}
Environmental Scientist

TO : Daniel K. Donnelly
Chief, Annapolis Laboratory

THRU : Bernard A. Sammons ^{BAS}
Acting Metal's Team Leader, Inorganic Analysis Section

Samples 860617-13 - 20 were analyzed by furnace atomic absorption spectroscopy and inductively coupled plasma optical emission spectrometry. The results are presented in the attached table.

Additional quality control data are available upon request.

Wipe samples were analyzed as received and reported in ug/L. Additional unit conversion must be taken into consideration for the amount of surface area sampled. Extract volumes were 100 millileters.

Sample Description:

<u>Lab No.</u>	<u>Description</u>
860617-13	Portsmouth Day Care Center, swipe sample #1
-14	Portsmouth Day Care Center, swipe sample #2
-15	Portsmouth Day Care Center, swipe sample #3
-16	Portsmouth Day Care Center, swipe sample #4
-17	Portsmouth Day Care Center, swipe sample #5
-18	Portsmouth Day Care Center, swipe sample #6
-19	Portsmouth Day Care Center, swipe sample #7, Blank
-20	Portsmouth Day Care Center, swipe sample #8

SB:ad

cc: B. R. Fletcher ^{BRF}
QCO

Project Name: Portsmouth Day Care Center - Superfund-Remedial, 6TFA03RHZZ

Sample Number:	<u>860617-13</u> ug/L	<u>860617-14</u> ug/L	<u>860617-15</u> ug/L	<u>860617-16</u> ug/L	<u>860617-17</u> ug/L	<u>860617-18</u> ug/L
----------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

METALS

Antimony	<10(108%)	<10*(108%)	<10(100%)	20(112%)	34(106%)	<10(96%)
Chromium	<25	<25	<25*	<25*	<25*(98%)	<25
Copper	<25	<25	214	189	1,380(104%)	104+2(97%)
Lead	326	102	223	249	2,130+24(93%)	100(MSA)
Tin	49(MSA)	<20*(95%)	<20(MSA)	<20(MSA)	<20(MSA)	58(103%)
Zinc	1,290	1,440	2,300	1,200	3,750	765+3(106%)

Sample Number:	<u>860617-19</u> ug/L	<u>860617-20</u> ug/L
----------------	--------------------------	--------------------------

METALS

Antimony	<10(104%)	<10(100%)
Chromium	<25	<25
Copper	<25*	28+1(100%)
Lead	<10(107%)	28+1(MSA)
Tin	87(108%)	57(98%)
Zinc	434	2,140+10

MSA = Method of Standard Additions

*Analyzed in duplicate, both values below specified detection limit.

ORIGINAL
(Red)

6.2.2 Inorganic Data: Lab Case 6079

6.2.2.1 Introduction

The findings offered in this report area based on a general review of all available inorganic laboratory data, blank analysis results, matrix spike and duplicate results, calibration data, and ICP interference data.

6.2.2.2 Qualifiers

It is recommended that this data package be utilized only with the following qualifier statements:

- o All positive sample results for sodium are questionable.
- o All positive results for tin are questionable except sample MCD667.

The aforementioned results were designated questionable because there is evidence to doubt the presence of these compounds (they may or may not be present.) Generally, these data are best used to demonstrate that substantially greater levels of environmental contamination do not exist in the above sample results.

- o The actual detection limit for selenium in sample MCF 199 may be substantially higher then reported.
- o Although there is no reason to suggest that any sample results are questionable, it was not possible to verify the results for arsenic, selenium, and thallium due to insufficient documentation. Similarly, it was not possible to verify that results within five times of the instrument detection limit are not artifactual.

ORIGINAL
(Red)

6.2.2.3 Findings

- o Field and/or laboratory blank analysis revealed the presence of sodium and tin at sufficient levels to question the aforementioned sample results.
- o The matrix spike result for selenium in sample MCF199 exhibited a zero recovery.
- o The laboratory did not include absorbance in the raw data for arsenic, selenium, and thallium, only final concentrations. Therefore, errors resulting from conversion to final concentration could not be ascertained. Additionally, low-level results could not be verified since field and laboratory blanks were reported in the same manner and results which are just below instrument detection limits were not provided in the raw data.

6.2.2.4 Summary

The text of this report has been formulated to address only those problem areas which affect the application of the data to the investigation. The attached quality assurance review has identified blank contamination, poor matrix spike result, and insufficient documentation as the primary areas of concern. Please see the attached Support Documentation appendix for specifics on this report.

"non responsive based on revised scope"

Report prepared by

Date: September 25, 1987

SECTION 7

ORIGINAL
(Red)

7.0 TOXICOLOGICAL EVALUATION

7.1 Summary

Soil samples obtained from the Portsmouth Day Care Center property revealed lead concentrations within ranges generally reported in urban areas. Two soil samples, taken near a sliding board and the swings, revealed somewhat higher lead concentrations, although levels still fell within the range typical of urban areas.

Routine exposure to lead levels reported in day care soils would not be expected to contribute significantly to levels of exposure that urban children would ordinarily be expected to receive. However, urban soils, which are enriched in lead content, can provide a significant measure of an urban child's daily lead intake.

As a group, children generally exhibit higher blood lead levels than adults, and blood lead levels of urban children typically exceed those of their non-urban counterparts. Children of the ages attending the day care center are a population at risk for lead poisoning for a number of reasons. Adverse effects associated with lead exposure range from severe central nervous system damage, nephropathy, gastrointestinal effects, and frank anemia at blood lead levels of 40 to 100 ug/dl, to subtle effects on cognitive functioning and other types of behavioral performance at blood lead levels previously thought to be "safe."

Lead concentrations reported in day care soils are not anticipated to pose more of a potential threat to center children than would other soils and dusts in their urban environment. These soils may, as is the case with all urban soils, provide one more source of lead exposure to day care children, whose overall intake of lead may already be too high. Ideally, the lead intake of children should be minimized wherever possible, due to this group's increased sensitivity to adverse effects of this toxic metal.

ORIGINAL
(Red)

7.2 Support Data

7.2.1 Soil Samples

Seventeen surface soil samples taken on the Portsmouth Day Care Center property revealed lead levels ranging from 28 to 1,350 mg/kg. With the exception of zinc, reported at concentrations of 35 to 1,400 mg/kg in soil samples, all other reported metal concentrations fell within expected ranges.

Urban soils generally contain higher concentrations of certain metals, including lead and zinc. Soil lead concentrations in urban areas range from 150 to 350 mg/kg and have been reported to range upwards of 8,000 mg/kg near heavily traveled roads.^{1,2} Zinc is reported in all soils at concentrations of 22 to 347 mg/kg; higher concentrations are often reported in urban areas.³ It is apparent, therefore, that only a few samples obtained from the day care center property (namely, nos. 16 and 17, obtained from in front of a sliding board and by the swings, respectively) exhibit elevated lead and zinc levels. Sample nos. 1 and 5, located at the northwestern end of the building, also exhibited elevated zinc concentrations; all lead levels reported at this end of the property were within the ranges reported in urban areas. Two background soil samples revealed 61 and 255 mg/kg lead, and 50 and 304 mg/kg zinc.

Of the two metals noted above, lead is the more toxic and would pose the most notable potential threat to urban children who attend the day care center. The following toxicological evaluation will therefore primarily consider the potential impacts of soil lead exposure on this population.

The primary routes of exposure to the soil lead concentrations by day care children are expected to be inhalation of dusts generated from bare ground surfaces and inadvertent ingestion of lead-contaminated dirt on hands or other dust-collecting surfaces. An additional and possibly significant exposure route for some children can be pica, the compulsive, habitual consumption of non-food items such as paint chips and soil. As a group, children are more apt to have pica.

ORIGINAL
(Red)

Children also represent a special population at risk for lead exposure for several reasons: Their dietary lead intake rate is five-fold greater than for adults on a body weight basis, absorption rates for lead are higher in children than in adults by at least three-fold, children consume more dust than adults, and children have a faster rate of central nervous system (CNS) development, one of the major target systems for lead toxicity.²

Lead concentrations reported in day care soil samples for the most part did not exceed levels reported in many urban soils and therefore would not be expected to contribute significantly to levels of exposure that day care children, who are presumably urban residents, would be expected to receive. It is important to note that urban residents (and children in particular) are inherently exposed to higher lead levels from automobile exhaust, general urban aerosol (including dust fallout from exterior paint and building demolition residues), ingestion of locally grown produce, as well as smelters and foundries if present in the vicinity.² It has been estimated that adults residing in urban areas typically consume 25 to 100 ug or more of lead per day from all sources, while many urban children ingest up to 175 ug of lead per day in their food, water, and air alone.⁴

Urban soils can provide a significant additional source of lead for children, especially children of the ages attending the day care center. Significant lead exposure can arise from ingestion of urban soil or dust particles during the normal play activities of children. A child playing at a playground near a roadside might consume 20 to 200 ug of lead, while eating a single piece of candy with unwashed hands (assumes a street dust lead concentration of 1,000 to 2,000 mg/kg).² One such incident, therefore, has the potential of doubling a child's total daily lead intake. On the average, urban atmospheres, including fallout onto soils and street house dusts, are expected to provide an additional 91 ug of lead per day to children.²

ORIGINAL
(filed)

As a group, urban children also exhibit higher blood lead levels (PbB) than their non-urban counterparts, as a consequence of their higher exposure levels. Blood lead levels in children up to six years of age are generally higher than those in non-occupationally exposed adults; children aged two to three years tend to have the highest levels.² As previously noted, children are a special population at risk with regard to lead poisoning due to their faster rate of CNS development.

Available literature on adverse effects associated with lead suggest a continuum of biological effects associated with a broad range of exposure levels. The most serious effect is severe, irreversible CNS damage manifested in terms of encephalopathic signs and symptoms such as hyperirritability, ataxia, convulsions, stupor, and coma. In children, effective PbB for producing encephalopathy or death are lower than for adults, starting at approximately 80 to 100 ug/dl.⁵ Subacute health effects of lead exposure include peripheral neuropathies (reported in children with PbB as low as 40 to 60 ug/dl), nephropathy (reported at PbB as low as 70 to 80 ug/dl), gastrointestinal systems such as colic (PbB as low as 60 ug/dl), frank anemia (PbB as low as 70 ug/dl), and reduced hemoglobin synthesis (PbB as low as 40 ug/dl).²

Additional studies demonstrate evidence for further health effects occurring in non-overtly lead-intoxicated children at similar or lower PbB than previously noted for overt effects. These effects include peripheral nerve dysfunction, measured by slowed nerve conduction velocities, in children with PbB as low as 30 ug/dl.² Many other studies of CNS cognitive (IQ) effects, when considered collectively, can be interpreted as indicative of likely associations between neurophysiologic deficits and low-level lead exposures in young children with PbB ranging as low as 30 to 50 ug/dl.² The magnitude of average IQ deficits appears to be approximately five points at PbB of 50 to 70 ug/dl and about four points at PbB of 30 to 50 ug/dl.²

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(Red)

Certain recent studies have suggested the occurrence of small, but not unimportant, effects of lead on cognitive functioning, the ability to focus attention, appropriate social behavior, and other types of behavioral performance at PbB previously thought to be "safe," namely, 15 to 30 ug/dl.² Some of these studies did not control for potentially confounding variables, although lead cannot be totally ruled out as a possible etiologic factor. Another study has indicated subtle but significant hearing loss (5 to 10 decibels) in children with PbB as low as 12 ug/dl; this study may possibly provide an explanation for some of the learning disabilities that have been observed previously.⁶

Based on several of these recent studies, EPA is considering reducing the PbB it considers to be the upper limit of normal to 10 ug/dl.⁷ The Centers for Disease Control (CDC) has recently redefined its definition of "excessive absorption of lead" by children from 30 ug/dl to 25 ug/dl.⁸ Data obtained from the second National Health and Nutrition Examination Study (NHANES II) suggest that urban children (six months to five years) of all races have average PbB of 16.8 ug/dl; in this group, blacks have average PbB of 20.9 ug/dl.⁹ Both of these blood levels exceed the level EPA is considering proposing as the upper limit of normal; the average level in black children also approaches CDC's threshold for excessive absorption. Based on the NHANES II data and recent studies of subtle effects at blood lead levels previously thought to be innocuous, it becomes clear that exposure of urban children to lead should be minimized as much as possible. It may be noted, however, that NHANES II data also demonstrate that blood lead levels in the United States have declined significantly over the term of the study (five years), possibly due to the gradual elimination of leaded gasoline.⁹

While it is not anticipated that lead levels in most of the soil samples obtained from the Portsmouth Day Care Center will differ significantly from soil lead levels that center children would ordinarily be exposed to in their urban environments, it is nevertheless clear that urban soils add notably to the daily lead intake of children of the ages attending the center. In this regard, the two highest reported lead levels (727 and 1,350 mg/kg, from the sliding board and swing areas) may warrant separate consideration. Several authors have attempted to correlate soil lead content to blood lead levels of urban children, and EPA has estimated that an increase in PbB of about 2 ug/dl per 1,000 mg/kg of lead in soil may occur.² This estimate is based on a study by Stark, et al. (1982) and is considered to represent a reasonable median estimate.¹⁰

If a worst-case assumption, which considers a day care child's sole exposure to soil on the property to come from the highest area of lead contamination (i.e. by the swings), is made, an increase in PbB of about 2.6 ug/dl might be expected to result. It must be emphasized that it is highly unlikely that a child would receive 100 percent of his anticipated soil lead dose from the soil near the swings. Nevertheless, excessive exposure to soil in this area may provide a somewhat higher daily intake of lead than would normally be assimilated by an urban child, and as previously noted, lead intake by urban children should be minimized wherever possible. It is not likely that routine exposure to soil in this area would, in itself, pose a potential threat. Rather, the lead content of soil in this area may be only one of many potential sources of lead for day care children, whose overall intake of lead may already be too high. Blood lead levels of children attending the day care center would be essential in providing detailed estimates of risk. A screening study of blood lead levels in Portsmouth area children has been performed by the Health Department; however, results were not available for this report.

7.2.2 Wipe Samples

Seven wipe samples (including one background) were obtained from various exterior surfaces of the Portsmouth Day Care Center building in an attempt to determine the metal content of any dusts found on these surfaces. Lead was measured in all wipe samples, including the background samples. Wipe sample results are included in section 6. Caution must be exercised when interpreting these results, which are reported in ug/l of lead. These results do not indicate the actual concentration of lead present in dust on the sampled surfaces, but rather they represent the concentration of lead in the extract prepared by the analytical laboratory. Thus, the concentration of lead present on a weight basis, which would be required to provide a quantitative assessment of risk for day care children, cannot be ascertained from available data. As noted in the previous section, however, lead-contaminated dusts on surfaces are significant sources of lead for children of the ages attending the center.

A valid comparison among wipe sample results also cannot be made for a number of reasons: Removal efficiencies for surface dusts can vary significantly with the type of surface being sampled as well as personal variation in sampling technique; the area of each sample is unknown; the lead content of any paint that may be present on each surface is unknown; and the amount of dust present on a surface at a given time may be influenced by several factors such as compass direction, distance from the street, traffic volume, and prevailing wind patterns.¹¹ Wipe sample results are best used, therefore, to qualitatively confirm the presence of lead in dusts present on surfaces of the building. Whether the lead content of these dusts are typical of those found in urban areas cannot be determined with available information.

Prepared by:

Elizabeth Quinn

Elizabeth Quinn, Toxicologist

Date: September 25, 1987

ORIGINAL
(Red)

LIST OF SOURCES

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2. United States Environmental Protection Agency. 1984. Ambient Air Quality Criteria for Lead. EACO, Research Triangle Park, NC. Review Draft.
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5. National Academy of Sciences. 1972. Lead: Airborne lead in perspective. Washington, D.C., National Academy of Sciences. (Biology effects of atmospheric pollutants.)
6. Otto, D.A. 1986. Cited in Science News, Vol. 130, No. 25-26, p. 391.
7. Raloff, J. 1986. Excess lead: Its evolving definition. Science News, Vol. 130, No. 21, p. 333.
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(Red)

10. Stark, A.D., et al. 1982. The relationship of environmental lead to blood-lead levels in children. Environ. Res. 27: 372-383.
11. Chavalitnitikul, K., and L. Levin. 1984. A laboratory evaluation of wipe testing based on lead oxide surface contamination. J. Am. Indus. Hygiene Assoc. 45: 31-317.

APPENDIX A

1.A. COST CENTER: Region III		FIT ZONE I CONTRACT CONTRACT NO. 68-01-7346 TECHNICAL DIRECTIVE DOCUMENT (TDD)		2. NO.: F3-8612-41	
1.B. ACCOUNT NO.: S575VA11SI				2.A.: <input checked="" type="checkbox"/> NEW ASSIGNMENT <input type="checkbox"/> AMENDMENT	
3.A. PRIORITY: <input type="checkbox"/> HIGH <input checked="" type="checkbox"/> MEDIUM <input type="checkbox"/> LOW	4.A. ESTIMATE OF TECHNICAL HOURS: 150	5.A. SSID NO.:	6. DESIRED REPORT FORM <input checked="" type="checkbox"/> FORMAL REPORT <input type="checkbox"/> FORMAL BRIEFING <input type="checkbox"/> LETTER REPORT <input type="checkbox"/> OTHER (SPECIFY):		
3.B. KEY EPA CONTACT: NAME: D. Ostrauskas PHONE: 597-6488	4.B. ESTIMATE OF SUBCONTRACT COST:	5.B. EPA SITE NAME: Portsmouth Day Care Center	7.A. START DATE: 12/86		
		5.C. CITY/COUNTY/STATE: Portsmouth Portsmouth, VA.	7.B. ESTIMATED COMPLETION DATE: 01/31/87		
8. TYPE OF ACTIVITY: <input type="checkbox"/> PA <input checked="" type="checkbox"/> SI <input type="checkbox"/> ESI <input type="checkbox"/> HRS SUPPORT <input type="checkbox"/> QA SUPPORT <input type="checkbox"/> SPECIAL STUDIES <input type="checkbox"/> ENFORCEMENT SUPPORT <input type="checkbox"/> TRAINING <input type="checkbox"/> EQUIPMENT MAINTENANCE <input type="checkbox"/> GENERAL TECHNICAL ASSISTANCE <input type="checkbox"/> PROGRAM MANAGEMENT					
9. GENERAL TASK DESCRIPTION: Preparation of site inspection report for this subject site.					
10. SPECIFIC ELEMENTS: 1.) Review background information. 2.) Contact state and local agencies for relevant information. 3.) Review information obtained under TDD-F3-8606-01. 4.) Also review file information obtained under TDD-F3-8212-23 and F3-8405-19. 5.) Perform tox evaluation of the QA'd lab data. 6.) Prepare and submit site inspection report. 7.) All work on this project to be performed according to: WP-SI-1, Rev. 1.			11. INTERIM DEADLINES:		
<input type="checkbox"/> ADDITIONAL SCOPE ATTACHED					
12. COMMENTS: <div style="text-align: center;">State Code 051 County Code 740</div>					
13. AUTHORIZING: <input checked="" type="checkbox"/> RPO <input type="checkbox"/> DPO <input type="checkbox"/> PO			14. DATE: 12/19/86		
15. RECEIVED BY: <input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> ACCEPTED WITH EXCEPTIONS (ATTACH) <input type="checkbox"/> REJECTED			16. DATE: 12.29.86		

ORIGINAL (Red)

non responsive based on revised scope

APPENDIX B

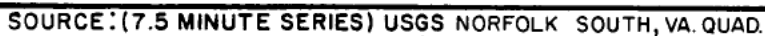
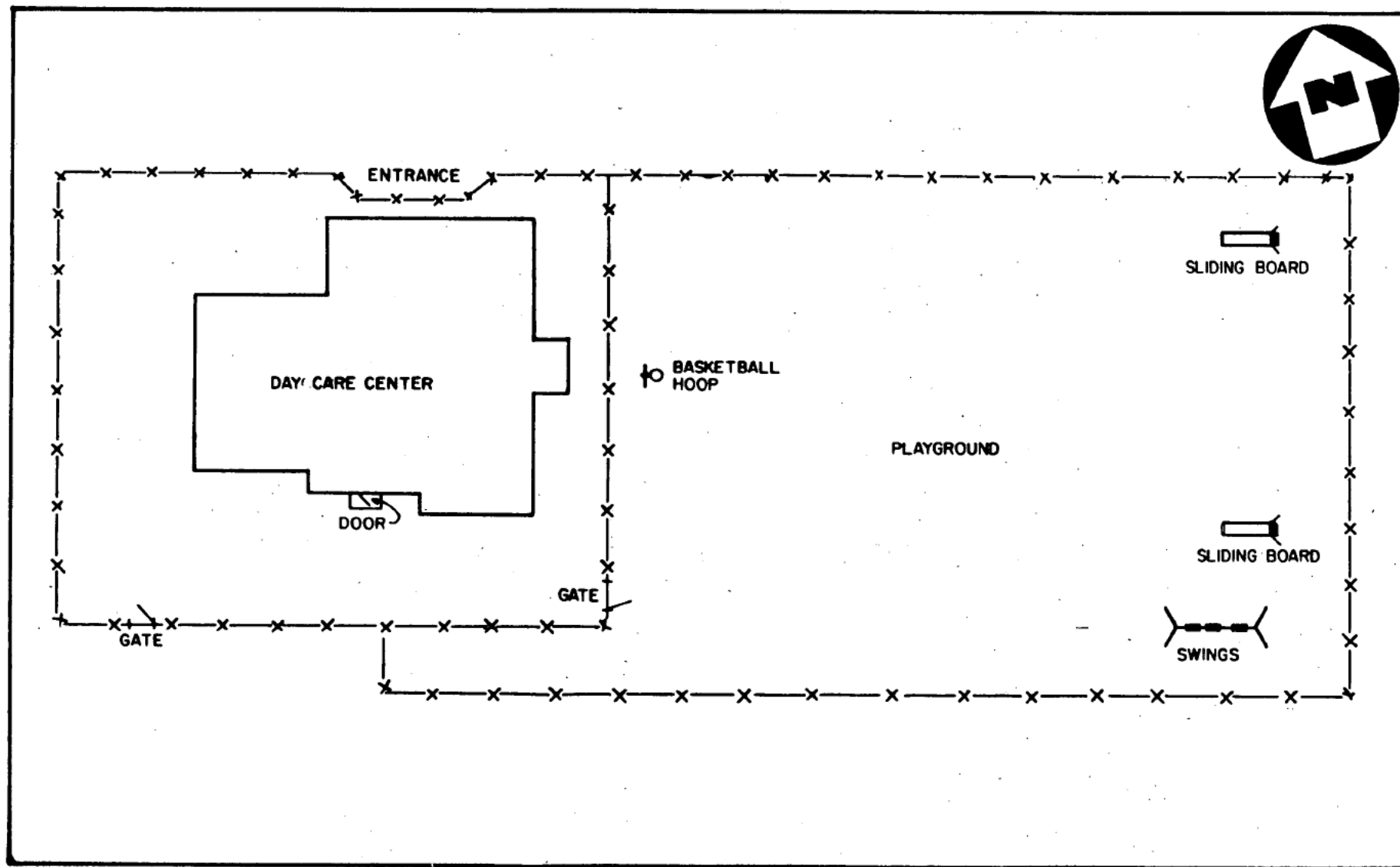


FIGURE 1

NUS
CORPORATION

 A Halliburton Company



SITE SKETCH
PORTSMOUTH DAY CARE CENTER
 (NO SCALE)

FIGURE -2

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD765

00013

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	10000	P	13. MAGNESIUM	6840	P
2. ANTIMONY	13U	P	14. MANGANESE	435	P
3. ARSENIC	[5.1]	F	15. MERCURY	0.2	CV
4. BARIUM	[80]	P	16. NICKEL	[18]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	7720	P
6. CADMIUM	2.5U	P	18. SELENIUM	2.5U	F R
7. CALCIUM	[2170]	P	19. SILVER	1.5U	P
8. CHROMIUM	29	P	20. SODIUM	[419]	P
9. COBALT	[5.3]	P	21. THALLIUM	5.1U	F
10. COPPER	39	P	22. TIN	29	P
11. IRON	19900	P	23. VANADIUM	41	P
12. LEAD	97	P	24. ZINC	173	P

Cyanide NR Percent Solids (%) 99

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager JML

ORIGINAL
(Red)

00014

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD766

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328CQC REPORT NO. 56071Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	6070	P	13. MAGNESIUM	[442]	P
2. ANTIMONY	14U	P	14. MANGANESE	41	P
3. ARSENIC	5.3U	F	15. MERCURY	0.4	CV
4. BARIUM	[103]	P	16. NICKEL	[6.2]	P
5. BERYLLIUM	0.53U	P	17. POTASSIUM	[538]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	3560	P	19. SILVER	1.6U	P
8. CHROMIUM	7.9	P	20. SODIUM	344U	P
9. COBALT	3.7U	P	21. THALLIUM	5.3U	F
10. COPPER	17	P	22. TIN	29	P
11. IRON	2890	P	23. VANADIUM	[12]	P
12. LEAD	193	P	24. ZINC	139	P

Cyanide NR Percent Solids (%) 95

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

Form I

U.S. EPA Contract Laboratory Program
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703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD767

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	7200	P	13. MAGNESIUM	5180	P
2. ANTIMONY	13U	P	14. MANGANESE	341	P
3. ARSENIC	5.2U	F	15. MERCURY	0.1u	CV
4. BARIUM	[59]	P	16. NICKEL	[11]	P
5. BERYLLIUM	0.52U	P	17. POTASSIUM	5870	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[2340]	P	19. SILVER	1.5U	P
8. CHROMIUM	20	P	20. SODIUM	[366]	P
9. COBALT	[4.6]	P	21. THALLIUM	5.2U	F
10. COPPER	39	P	22. TIN	31	P
11. IRON	15300	P	23. VANADIUM	37	P
12. LEAD	108	P	24. ZINC	302	P

Cyanide NR Percent Solids (%) 97

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
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703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD768

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium
Matrix: Water Soil X Sludge Other

mg/kg dry weight

1. ALUMINUM	5190	P	13. MAGNESIUM	[442]	P
2. ANTIMONY	14U	P	14. MANGANESE	28	P
3. ARSENIC	5.3U	F	15. MERCURY	0.1u	CV
4. BARIUM	[49]	P	16. NICKEL	[4.8]	P
5. BERYLLIUM	0.53U	P	17. POTASSIUM	[672]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[1480]	P	19. SILVER	1.6U	P
8. CHROMIUM	6.4	P	20. SODIUM	344U	P
9. COBALT	3.7U	P	21. THALLIUM	5.3U	F
10. COPPER	14	P	22. TIN	[20]	P
11. IRON	2250	P	23. VANADIUM	[11]	P
12. LEAD	62	P	24. ZINC	59	P

Cyanide NR

Percent Solids (%) 95

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager JML

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Form I

00017

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Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD366

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328CQC REPORT NO. 56071Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	4680	P	13. MAGNESIUM	[392]	P
2. ANTIMONY	14U	P	14. MANGANESE	17	P
3. ARSENIC	5.3U	F	15. MERCURY	0.1u	CV
4. BARIUM	[40]	P	16. NICKEL	[4.9]	P
5. BERYLLIUM	0.53U	P	17. POTASSIUM	[496]	P
6. CADMIUM	2.7U	P	18. SELENIUM	2.7U	F R
7. CALCIUM	[1140]	P	19. SILVER	1.6U	P
8. CHROMIUM	[5.1]	P	20. SODIUM	347U	P
9. COBALT	3.7U	P	21. THALLIUM	5.3U	F
10. COPPER	[8.6]	P	22. TIN	[18]	P
11. IRON	2050	P	23. VANADIUM	[9.5]	P
12. LEAD	29	P	24. ZINC	68	P

Cyanide NRPercent Solids (%) 94

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

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Form I

00018

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD666

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328CQC REPORT NO. 56071Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	6280	P	13. MAGNESIUM	[731]	P
2. ANTIMONY	13U	P	14. MANGANESE	106	P
3. ARSENIC	[5.2]	F	15. MERCURY	0.8	CV
4. BARIUM	313	P	16. NICKEL	[9.4]	P
5. BERYLLIUM	0.52U	P	17. POTASSIUM	[829]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	4140	P	19. SILVER	1.5U	P
8. CHROMIUM	13	P	20. SODIUM	[480]	P
9. COBALT	3.6U	P	21. THALLIUM	5.2U	F
10. COPPER	51	P	22. TIN	42	P
11. IRON	6350	P	23. VANADIUM	[21]	P
12. LEAD	727	P	24. ZINC	602	P

Cyanide NR Percent Solids (%) 97

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

ORIGINAL
(Red)

00019

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD667

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328CQC REPORT NO. 56071Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	5240	P	13. MAGNESIUM	[828]	P
2. ANTIMONY	13U	P	14. MANGANESE	293	P
3. ARSENIC	6.1	F	15. MERCURY	1.0	CV
4. BARIUM	428	P	16. NICKEL	[13]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	[797]	P
6. CADMIUM	3.5	P	18. SELENIUM	2.6U	F R
7. CALCIUM	8710	P	19. SILVER	1.5U	P
8. CHROMIUM	22	P	20. SODIUM	[571]	P
9. COBALT	3.6U	P	21. THALLIUM	5.1U	F
10. COPPER	99	P	22. TIN	348	P
11. IRON	38600	P	23. VANADIUM	[23]	P
12. LEAD	1350	P	24. ZINC	1400	P

Cyanide NR Percent Solids (%) 98

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD668

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. ALUMINUM	11900	P	13. MAGNESIUM	[1020]	P
2. ANTIMONY	13U	P	14. MANGANESE	24	P
3. ARSENIC	7.1	F	15. MERCURY	0.1u	CV
4. BARIUM	[65]	P	16. NICKEL	[7.2]	P
5. BERYLLIUM	0.51U	P	17. POTASSIUM	[734]	P
6. CADMIUM	2.6U	P	18. SELENIUM	2.6U	F R
7. CALCIUM	[1290]	P	19. SILVER	1.5U	P
8. CHROMIUM	18	P	20. SODIUM	[551]	P
9. COBALT	3.6U	P	21. THALLIUM	5.1U	F
10. COPPER	17	P	22. TIN	27	P
11. IRON	7540	P	23. VANADIUM	28	P
12. LEAD	61	P	24. ZINC	50	P

Cyanide NR Percent Solids (%) 98

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

ORIGINAL
(Red)

00021

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD669

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328CQC REPORT NO. 56071Elements Identified and Measured

Concentration: Low X Medium _____
Matrix: Water _____ Soil X Sludge _____ Other _____

mg/kg dry weight

1. <u>ALUMINUM</u>	<u>4300</u>	<u>P</u>	13. <u>MAGNESIUM</u>	<u>[415]</u>	<u>P</u>
2. <u>ANTIMONY</u>	<u>14U</u>	<u>P</u>	14. <u>MANGANESE</u>	<u>56</u>	<u>P</u>
3. <u>ARSENIC</u>	<u>8.6</u>	<u>F</u>	15. <u>MERCURY</u>	<u>0.8</u>	<u>CV</u>
4. <u>BARIUM</u>	<u>115</u>	<u>P</u>	16. <u>NICKEL</u>	<u>[7.4]</u>	<u>P</u>
5. <u>BERYLLIUM</u>	<u>0.54U</u>	<u>P</u>	17. <u>POTASSIUM</u>	<u>[543]</u>	<u>P</u>
6. <u>CADMIUM</u>	<u>2.7U</u>	<u>P</u>	18. <u>SELENIUM</u>	<u>2.7U</u>	<u>F R</u>
7. <u>CALCIUM</u>	<u>[2200]</u>	<u>P</u>	19. <u>SILVER</u>	<u>1.6U</u>	<u>P</u>
8. <u>CHROMIUM</u>	<u>11</u>	<u>P</u>	20. <u>SODIUM</u>	<u>[469]</u>	<u>P</u>
9. <u>COBALT</u>	<u>3.8U</u>	<u>P</u>	21. <u>THALLIUM</u>	<u>5.4U</u>	<u>F</u>
10. <u>COPPER</u>	<u>26</u>	<u>P</u>	22. <u>TIN</u>	<u>29</u>	<u>P</u>
11. <u>IRON</u>	<u>4120</u>	<u>P</u>	23. <u>VANADIUM</u>	<u>[12]</u>	<u>P</u>
12. <u>LEAD</u>	<u>255</u>	<u>P</u>	24. <u>ZINC</u>	<u>304</u>	<u>P</u>

Cyanide NR Percent Solids (%) 93

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: _____

Lab Manager JML

Form I

00022

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MCD670

Date 6-20-86

INORGANIC ANALYSIS DATA SHEET

LAB NAME ROCKY MOUNTAIN ANALYTICAL
SOW NO. 784
LAB SAMPLE ID. NO. -

CASE NO. 6079/2328C

QC REPORT NO. 56071

Elements Identified and Measured

Concentration: Low X Medium
Matrix: Water Soil X Sludge Other

mg/kg dry weight

1. ALUMINUM	9.5U	P	13. MAGNESIUM	148U	P
2. ANTIMONY	13U	P	14. MANGANESE	2U	P
3. ARSENIC	5U	F	15. MERCURY	0.1u	CV
4. BARIUM	5.5U	P	16. NICKEL	3U	P
5. BERYLLIUM	0.5U	P	17. POTASSIUM	271U	P
6. CADMIUM	2.5U	P	18. SELENIUM	25U	F R
7. CALCIUM	176U	P	19. SILVER	1.5U	P
8. CHROMIUM	2.5U	P	20. SODIUM	327U	P
9. COBALT	3.5U	P	21. THALLIUM	5U	F
10. COPPER	1.5U	P	22. TIN	[13]	P
11. IRON	8U	P	23. VANADIUM	2.5U	P
12. LEAD	2.5U	F	24. ZINC	1U	P

Cyanide NR

Percent Solids (%) 100

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample is a Water Blank
Selenium value reported at a 10x dilution

Lab Manager JML